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I, Kevin Michael Beaver,

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The Influence of Marriage, Employment, and Education on Desistance from Marijuana: Examining the Impact of Life-Course Transitions in Rural and Urban Settings

Approved by:

John Paul Wright, Ph.D.
John Wooldredge, Ph.D.
The Influence of Employment, Marriage, and Education on Desistance from Marijuana: Examining the Impact of Life-Course Transitions in Rural and Urban Settings

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Kevin M. Beaver
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ABSTRACT

This paper attempts to rectify a void in the existing life-course and illegal drug use literature by examining desistance from marijuana in rural and non-rural vicinities. Until recently, the scholarship on crime has focused on the factors associated with recidivism, thereby overlooking an equally important topic—desistance, that is, the practice of not continuing to participate in illegal behavior. In order to address this neglected issue, and explore the possible explanations for the age-crime curve, Sampson and Laub (1993) set forth an integrated theory of informal social control. The thrust of this theoretical framework centered on adulthood bonds to conventional society, such as marriage and employment. They argued that adults who acquire and are highly-committed to such institutions, increase their odds of desisting from crime. However, Sampson and Laub neglect to take into account possible rural-urban differences in the desistance process. The emphasis on urban populations is also a characteristic of most studies examining drug use. This research examines desistance in drug use by rural and urban population, by using a life-course perspective. Three life course transitions were employed in this study: education, employment, and marriage. Also included in the analysis were measures of time spent with peers and contact with deviant friends. By using these measures, this study was able to test Sampson and Laub's theory. The sample for this study comes from waves 6 and 7 of the National Youth Survey. The multivariate models predicting desistance from marijuana lend little support for differences between rural versus non-rural locations. Although enrollment in college facilitates the desistance process, employment and marriage do not play a significant role in the desistance process. This paper concludes with some implications of these findings.
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CHAPTER ONE

Introduction

Personal and property offense rates begin to rise around the age of ten, peak at about seventeen, and fall until age twenty-five, where they remain at a relatively low and constant rate (Hirschi and Gottfredson, 1983). The nature of illegal drug use also tends to follow this age-graded pattern. Due to crimes being disproportionately committed by juveniles, the majority of criminological theories and research have tended to focus on offenses committed by juveniles. Actually, the bulk of theories were developed to explain issues surrounding delinquency. As a result, research on adult desistance from crime and substance abuse has been a relatively neglected topic until recent years. In fact, Gottfredson and Hirschi (1990) state that criminal propensities are established early, and will be sustained throughout life, so there is no need to conduct longitudinal research to examine the factors that contribute to crimes committed in adulthood. While some researchers (Gottfredson and Hirschi, 1990; Wilson and Herrnstein, 1985) have postulated that basic propensities to engage in criminal offending are recognized early in life and dispute the significance of events in adulthood, others (Sampson and Laub, 1992, 1993) have taken great measures to show participation in criminal behavior can be influenced by social factors throughout life.

Although early childhood and adolescent antisocial behavior is linked with later adulthood crime, not all adolescent delinquents persist with their criminal actions (Stattin and Magnusson, 1991), nor do the majority of youths continue using illegal substances throughout life (SAMHSA, 1998). Developmental theories have evolved in order to help
explain the etiology of offending during childhood, adolescence, and adulthood (Loeber and Hay, 1997). These theories focus on aggression and violence, in terms of both change and continuity, from childhood through adulthood. Moreover, different pathways of offending from childhood through adulthood are evident. Even though some forms of aggressive behavior seem to be prevalent in most children during adolescence, especially boys, the concern is with why some of these individuals escalate their actions from less serious forms of aggression to highly aggressive behavior that persists over time, which may result in violent offenders. While most serious offenders have had previous behavioral problems that have escalated in seriousness over the course of time, some have had a later age of onset. Early, as well as later, violence is linked with both low emotional and cognitive abilities (Loeber and Hay, 1997). To facilitate the understanding and exploration of these topics, developmental theories aim to conduct research by focusing on within-individual differences in order to identify behavioral changes among individual's patterns of offending. Moreover, developmental theories aim to recognize the factors associated with influencing behavioral development. Thus, the thrust of criminological developmental research has focused on the explanation of offending in terms of onset, escalation, de-escalation, and desistance (Loeber and Stouthamer-Loeber, 1996).

In response to the controversy surrounding the issues of stability and change of criminal behavior from adolescence through adulthood, Sampson and Laub (1993) set out on the arduous mission to explain criminal behavior over the life course—including its onset, persistence, and desistance. Although they acknowledge that adolescent delinquent behavior is correlated with later adult criminal actions, they posit that major
life events (e.g., marriage, entering the military) account for declining crime rates of older individuals. By identifying and exploring these continuities and discontinuities throughout life, Sampson and Laub developed an age-graded theory of informal social control. Focusing on institutions of social control that change over time, such as family, school, and employment, Sampson and Laub examined the ways these transitions influenced stability or change in antisocial behavior over the life course. Their findings and conclusions were based on previously collected data from individuals residing in Boston during the 1940-1965 time period. This rich source of data allowed for a thorough investigation of the effects of life course events on desistance from crime.

Initiation, maintenance, escalation, and desistance from illicit drug use can be examined from the life-course theoretical framework. Through the identification of risk and defensive factors in regards to illegal substance use, high-risk juveniles may be able to be targeted for intervention programs (Mazerolle, 2000). For instance, alcohol is often viewed as the "gateway" to addictive and more harmful drug use (Welte and Barnes, 1985). Often referred to as the "stepping-stone" process, this theory states that individuals who use alcohol are more likely to experiment with marijuana, followed by more dangerous drugs, such as heroin and cocaine (Welte and Barnes, 1985). This is not to say that all juveniles who use alcohol will use marijuana, and then heroin and cocaine. But, individuals who use less additive drugs are more at-risk for escalating their drug choice. While this line of progression may assist in the comprehension of adolescent pathways to addictive and dangerous drug using patterns, a more complete and thorough examination of the factors surrounding illegal substance use can be explored by using the life-course theoretical framework.
Not only is illicit substance abuse a severe problem for many individuals, but it is also an important topic to criminology because it has been associated with subsequent forms of delinquent and criminal behavior (Watters, Reinarman, and Fagan, 1985). While some researchers maintain that drug users engage in crime to acquire financial assets to support their habit (DeFleur, Ball, and Snarr, 1969), others suggest that addicts have an underlying propensity to engage in unlawful actions (Gottfredson and Hirschi, 1990). Although a number of scholars advocate this "common-cause" model between drug use and other criminal activities (e.g., Collins, 1981), studies examining one particular drug (e.g., marijuana) should be able to develop more appropriate and fitting policy recommendations relevant to the specified substance. In addition to these theories, evidence suggests varying degrees of drug use involvement can be explained by the life-course framework (e.g., Horney, Osgood, and Marshall, 1995). Consequently, by using the theory set forth by Sampson and Laub (1993), it is possible to examine the lifelong factors associated with variations in drug use.

The work of Sampson and Laub (1993) breathed new life into issues surrounding the rise and fall of criminal behavior throughout the life course. Just as these researchers examined factors relating to desistance from crime, additional researchers have employed this framework to study the lifelong changes in drug use (e.g., Esbensen and Elliott, 1994). Until recently, illicit drug use research investigated predictors associated with initiation and escalation. However, a number of scholars have examined specific factors relating to desistance from drug use (e.g., Lanza-Kaduce, Akers, Krohn, and Radosevich, 1984; White and Bates, 1995), but the findings from these studies have been mixed. In addition, most criminological research has focused on one contextual setting—urban life
(Laub and Lauritsen, 1993), and thus, there is a general lack of knowledge on the
differential usage/desistance rates for illicit drug use between rural and urban
environments.

The point of departure for this paper is an attempt to void part of the rural/non-
rural knowledge gap in illegal drug desistance by examining marijuana cessation in rural
and urban settings. The purpose of this study, grounded in the theoretical framework of
life-course transitions (see Piquero and Mazerolle, 2001) and developmental theories (see
Thornberry, 1997), is to investigate the effects of employment, marriage, and education
on desistance from marijuana. Using a nationally representative sample of adolescents
and young adults, these bonds will be examined by themselves as well as together to see
if there is a cumulative effect. That is, it may be that individuals who possess all three
bonds are more likely to desist than individuals having only one of these bonds. It is
hypothesized that the more bonds an individual has to society, the more likely they are to
desist from criminal behavior (Hirschi, 1969). In addition, these bonds will be explored
to see if one bond is more powerful than the others. In other words, marriage may play a
more central role in desistance from criminal behavior than employment and/or
education. Specifically, the hypothesis is that marriage will be the most significant bond
in perpetuating the desistance process. Additionally, the environmental setting an
individual resides in will be studied to see if individuals residing in either of the areas
(rural or urban) are more likely to desist from marijuana. Due to the lack of life course
research dealing with desistance in rural-urban areas, I hold no a priori expectations.
Based on this research, a deeper understanding of life course issues in different structural
locations as well as possible policy implications should become evident.
CHAPTER TWO

Literature Review

THE DEVELOPMENTAL PERSPECTIVE

The majority of developmental theories concentrate on the criminal career (e.g., Blumstein, Cohen, and Farrington, 1988). In order to examine the factors associated with offending, these theories center on four key concepts—onset, persistence, escalation, and desistance (Farrington, 1992). By focusing on individuals, researchers are able to tap the factors associated with different degrees of involvement in criminal behavior over time (Loeber and Stouthamer-Loeber, 1996). In addition, these theories not only pay attention to the short-term advances in antisocial behavior, but the long-term impact of these behavioral conduct problems as well (Farrington, 1992). In particular, each of the aforementioned concepts may be influenced by different life course dynamics. That is, aspects impacting onset may be unlike those associated with persistence, escalation, and desistance (Farrington, 1992). By identifying these differences, prevention programs may be able to target specific behaviors in order to decide when to intercede (Loeber and Stouthamer-Loeber, 1996). Whether it is factors associated with onset, persistence, escalation, or desistance, developmental theories try to explain career criminals by focusing on lifelong changes, which had been previously ignored by traditional criminological theories (Farrington, 1992).

Onset. Most chronic adult offenders have been plagued by previous antisocial behavioral problems and contacts with the criminal justice system (Loeber, 1987; Nagin and Farrington, 1992; Stattin and Magnusson, 1991). In fact, research indicates the
criminal career usually begins to emerge early in life (Loeber, 1987; Loeber and Hay, 1997; Nagin and Farrington, 1992). Differences in aggressive behavior have been documented as early as before the age of two (Kagan, 1988) and in fact, a small percentage of elementary children begin to exhibit serious conduct problems before enrollment in high school (Loeber, 1987). Children engaging in delinquent behavior before the age of thirteen are at a much greater risk for engaging in crime as an adult (Loeber and Farrington, 2000). Since delinquency is highly correlated with subsequent adult criminal behavior (Loeber, 1982), these children are at high-risk for continuing this behavior over time. Moreover, according to Loeber and Hay (1997) most minor forms of aggression emerge before the age of thirteen, whereas the relationship between more serious forms of physical aggression is associated with a later age of onset. That is, there is a positive relationship for age of onset and severity of offense, yet minor forms of aggression usually precede severe physical aggression (Loeber and Hay, 1997). Thus, minor forms of aggression act as a precursor to violent, physical aggression. Elaborating on these differences, Moffit (1993) hypothesized that life-course persistent offenders have an early age of onset, however the adolescence-limited group experiences a late age of onset characterized by a lack of persistent antisocial behavior over the life course.

While not all juvenile delinquents develop into serious adult criminals, the majority of serious offenders have exhibited an onset of antisocial personalities and behaviors during childhood and adolescence (Loeber and Hay, 1997; Loeber and Stouthamer-Loeber, 1987).

Initial drug and alcohol use begins around age eleven and peaks between the ages of fifteen and nineteen, and starts to decrease thereafter (Esbensen and Elliott, 1994).
Social bonding (Hirschi, 1969) and differential association (Sutherland and Cressey, 1978) theories have been used to identify the factors related to initiation into drug use. While both of these theories have been able to account for adolescents entrance into illegal drugs (e.g., Jaquith, 1981; Massey and Krohn, 1986), substantial support has been found for studies integrating both of these paradigms (e.g., LaGrange and White, 1985; Matsueda, 1982). Factors found to be associated with drug use are having pro-drug values, exposure to delinquent friends, and having academic problems (O'Donnell, Hawkins and Abbott, 1995). Age of onset is important because juveniles who begin using illegal drugs at an early age are more likely to continue engaging in illicit substance use, and have a higher risk of partaking in other criminal actions (Zhang, Wieczorek, and Welte, 1997).

**Stability.** While not all juvenile offenders continue with their deviant actions, there is a significant correlation between previous antisocial problems and future criminal behavior (Stattin and Magnusson, 1991). Olweus (1979) reviewed over sixteen studies focusing on aggressive behavior and found a correlation of .63 between early aggression in childhood or adolescence and subsequent aggression. Moreover, Stattin and Magnusson (1991), examining criminal activity over time, showed individuals who committed more criminal offenses during one time period were more likely to partake in criminal behavior at a later time period and to offend more frequently. Although most juvenile offenders discontinue their antisocial behavior, a small group of delinquents persist with their aggressive actions over time (Farrington, 1992). Loeber (1982) demonstrated that individuals who exhibit the most stability are those originally characterized by being the most aggressive. Furthermore, aggression tends to become
more stable as age increases. That is, individuals who exhibit antisocial behavior in late adolescence, as compared with adolescence or pre-adolescence, are more likely to continue this behavior throughout life (Loeber, 1982). While not all juvenile delinquents persist with aggressive behavioral patterns, there is an abundance of empirical evidence (e.g., Loeber, 1982; Loeber and Hay, 1997; Olweus, 1979) illustrating substantial stability in antisocial behavior over time.

Exposure and contact with marijuana-smoking peers contributes to the persistence of illicit drug use (Jaquith, 1981; Johnson, Marcos, and Bahr, 1987; Warr, 1998). Moreover, individuals who are characterized early on as having psychopathology tendencies have a much greater chance of persisting with daily drug use throughout life (Johnson and Kaplan, 1990). In addition, White, Pandina, and LaGrange (1987) identified several other characteristics for adolescents who were highly engrossed with illicit substance abuse. These juveniles, in comparison with adolescents who were not involved with illegal drugs, felt that their parents were not as affectionate to them. Moreover, they had educational difficulties and lower self-esteem. Consequently, these drug-using adolescents also were not committed to the learning experience and future educational prospects. Finally, they were distinguishable from their non-using counterparts on the basis of being more impulsive, antagonistic, and disinhibited. Thus, juveniles who begin to experiment with illegal drugs, particularly at younger ages, are at-risk to maintain their drug using behaviors, and in some cases escalate to more addictive substances.

Change. Although some offenders persist with, or even escalate, their criminal behavior, the majority of juveniles do not continue with their antisocial behavior
throughout adolescence and into adulthood (Gove, 1985; Robins, 1978). Moffit (1997) found the majority of delinquents, classified as adolescence-limiteds, are distinguished by temporary, erratic periods of criminal involvement during adolescent years. Since many juveniles discontinue criminal behavior, numerous studies have focused on the factors related with desistance. For instance, Loeber et al. (1991) found low disruptive behavior, good educational achievement, negative attitude to problem behavior, association with conforming peers, and positive interactions between the boy and his caretaker, to be correlated with desistance from offending. Moreover, there is evidence that desistance is associated with age of onset (Le Blanc and Fréchette, 1989 cited in Loeber and Hay, 1997). That is, delinquent acts with the earliest age of onset are terminated first, followed by offenses committed at a later age of onset. However, Loeber (1988) found juveniles who exhibited an early age of onset were least likely to desist, particularly when the behavior escalates into more serious types of violence.

Cessation from drug use has been associated with a number of factors. For instance, individuals who begin using marijuana at a later age are more likely to desist (Chen and Kandel, 1998). Moreover, drug users who are exposed to a greater amount of non-using friends have significantly higher odds of desisting (Lanza-Kaduce, Akers, Krohn, and Radosевич, 1984). In addition, research examining the effects of deterrence have found that marijuana users who feared being arrested increased their chances of desisting (Bachman, Johnston, O'Malley, and Humphrey, 1988). Furthermore, Bachman and associates (1988) found disapproval of drug use also contributed to cessation from marijuana and cocaine. While desistance usually occurs in adolescence, a plethora of studies focusing on career criminals have relied on life course transitions to explain the
desistance process in adulthood (e.g., Nagin, Farrington, and Moffit, 1995; Sampson and Laub, 1993, 1991). Thus, in the following sections, attention will turn to the impact of life course transitions on criminal behavior.

**Consequences of Delinquency.** Even though the majority of juveniles desist from criminal behavior, the effects of prior offending may linger into adulthood for those who desist, as well as those who persist. For instance, partaking in antisocial behavior reduces the likelihood of learning and developing appropriate prosocial skills (Loeber and Farrington, 2000). By lacking these proficiencies, coupled with the negative stigma of a prior record, many pathways to conventional society may be unachievable (Loeber and Farrington, 2000). For example, disruptive behavior in the education institution may cause the individual to be expelled. As a result, they may be more apt to dropout of school at an early age, and consequently are unable to earn their high school diploma. Moreover, without a diploma they are incapable of attending a college or university. Subsequently, employment opportunities will also be limited without a high school degree. Thus, without a successful education, many delinquents will be unable to develop strong ties to conventional society in two areas—education and employment. Even if a prior juvenile offender receives a high school diploma, educational and employment administrators may be skeptical about adopting them into these respective institutions because of their prior record. Hence, the effects of previous contacts with the criminal justice system may cause unforeseeable consequences long into the future. Generally, serious delinquency ruins the chances of building future adult bonds (Moffit, 1993). Without these bonds, along with the aforementioned consequences of delinquency, juvenile offenders are at high-risk for engaging in future crimes.
Juvenile substance abusers are also host to a number of negative consequences. For instance, Baumrind and Moselle (1985) found adolescents who used drugs were associated with developmental lag, amotivational syndrome, and psychosocial dysfunction. Evidence also suggests that the transition from adolescence to adulthood is impeded for drug using juveniles (Kandel, 1985). Moreover, adolescent drug users who spend more time with deviant peers have increased odds to participate in other forms of delinquency (Zhang, Wieczorek, and Welte, 1997). Also, adolescents who persist with drug abuse into parenthood are more likely to have children who use drugs (Fleming, Brewer, Gainey, Haggerty, and Catalano, 1997). Thus, while some may view minor adolescent drug use as a common, harmless practice, the outcomes associated with drug use demonstrate otherwise.

**THE LIFE-COURSE PERSPECTIVE**

According to Elder (1985:17), the life course is defined as "pathways through the age differentiated life span," where age differentiation refers to "the sequence of roles and events, social transitions, and turning points that depict the life course" (Elder 1975:167). Since age is the fundamental facet in the study of life course analysis, temporal issues, structural location, and historical change are able to impact the outcomes of studies based on age-graded data. Moreover, life course dynamics are concerned with long-term and short-term change, which is evident in two central concepts—pathways and transitions, respectively. *Pathways* refer to an instrument of progression over the life course, such as work and marriage life, criminal behavior, and self-esteem (Sampson and Laub, 1993). Pathways are long-term behaviors that take place over an extended period of the life
course. Whereas *transitions*, which are always rooted in pathways, are marked by a shorter time span and are characterized by explicit life events including, but not limited to, getting married and divorced, having children, and finding employment. While some transitions are age-graded, others are not; "off-timed events in the transition to adulthood are known to have enduring effects," yet "much less is know about disorderly event sequences" (Elder 1985:33).

The interdependence between pathways and transitions is able to breed turning points or changes in the life course (Elder, 1985). In other words, certain events and transitions are able to impact life pathways. According to Elder (1985:35), "some events are important turning points in life—they redirect paths." For instance, a chronic alcoholic may attempt to become sober once he/she gets married. Yet on the other hand, if a person is going through a divorce, they may begin experimenting with drugs and/or alcohol. In addition, once an individual finds legitimate employment, they may terminate their criminal behavior. Although Elder (1975, 1985) and others (Meisenhelder, 1977; Rand, 1987) support the impact of life events (transitions) on criminal behavior (pathways), others (Gottfredson and Hirschi, 1990; Wilson and Herrnstein, 1985) have argued that the propensity to engage in criminal behavior is established early (e.g., low self-control) and continues throughout life. Thus, delinquent behavior is unaffected by later, adult life events. Yet, an overwhelming amount of research, focusing on the life-

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1 It is important to note that according to Elder (1985:35) "the lifetime effects of ordinary events and turning points cannot be appraised without taking into account four sets of variables: (1) the nature of the event or transition, its severity, duration and so on; (2) the resources, beliefs, and experiences people bring to the situation; (3) how the situation or event is defined; and (4) resulting lines of adaptation as chosen from available alternatives. The first three factors influence lines of adaptation, but the latter links events and the subsequent life course. Lines of adaptation represent a process of constructing the life course. The same event or transition followed by different adaptations can lead to very different trajectories."
course (see Sampson and Laub, 1992, 1993) has stressed the importance of salient life events on the continuity and discontinuity of criminal behavior over time.

Building upon Hirschi's (1969) social control model coupled with Elder's (1975, 1985) conceptualization of the life course, Sampson and Laub (1992, 1993) posited an age-graded theory of informal social control. Using both qualitative and quantitative data from the Gluecks' famous study, Sampson and Laub (1993) focused on adulthood bonds to social institutions, such as marriage, education, employment, and the military to help explain why an individual is less likely from taking part in criminal behavior. They hypothesized that individuals bounded to society, through marriage, education, employment, etc., were more likely to desist from engaging in illegal activities. They further stress it is not essentially the bonds in and of them, but these ties coupled with the degree an individual feels bound to them that play a central role in desistance from criminal behavior. Moreover, these transitions (e.g., getting married and entering the military) should lead to lifelong pathways, such as desistance from criminal behavior. Based on their findings, Sampson and Laub (1993) concluded there was support for their integrated theory of informal social control. Specifically, they maintain that antisocial behavior in childhood can be mediated through adult social bonds.

Marriage, employment, and education are three major concepts in life course research that play a vital role in the desistance process. Each of these components is able to impact and shape the everyday lives of individuals. Since most people attend school for some amount of time, attain employment, and eventually marry, these facets were chosen as the focus of this study because of there relative frequency and intensity throughout the population. Whether it be career criminals, or law-abiding citizens,
marriage, employment, and education generally has had some amount of impact on their lives. Thus, these concepts will be the central focal point when examining the influence of life course transitions on desistance from criminal behavior.

**Education.** Education, a key socialization institution, occupies a significant amount of time for many children, adolescents, and young adults. Through school, individuals are able to advance their social standing and develop strong bonds to conventional society, thus impeding delinquency (Thornberry, Moore, and Christenson, 1985). On the other hand, weak attachment to school and poor school performance are consistent predictors of delinquency (Sampson and Laub, 1993). Likewise, low educational attainment has been associated with higher rates of delinquency (Hirschi and Hindelang, 1977). Moreover, Sampson and Laub (1993) contend that high school can be a "turning point" in an individual's life course—it may deflect previous offenders away from future crime. In a similar vein, many scholars view educational attainment as a preventive factor on offending (Arum and Beattie, 1999; Thornberry, Moore, and Christenson, 1985). For instance, Arum and Beattie (1999) found students who graduate from high school experience lifelong effects in the reduction of their chances of incarceration. Implementing social bonding theory, Thornberry, Moore, and Christenson (1985) found high school dropouts have a much greater risk of subsequent crime than their graduate counterparts (see also Farrington, Gallagher, Morley, St. Ledger, and West, 1986). Additionally, prior juvenile delinquency has been linked with less educational attainment in young adults, particularly males (Tanner, Davies, and O'Grady, 1999). In regards to college, individuals who enroll in postsecondary education seem to be less criminal than those who do not attend college (Rand, 1987). Thus, individuals
characterized by strong bonds to educational achievement are less likely to commit future crimes and also have reduced chances of incarceration.

Not only does education thwart delinquency and crime, but it also acts as a beneficial agent in the desistance process. For example, Rand (1987), examining the 1945 Philadelphia Birth Cohort in a follow-up study, found over two-thirds of Caucasians desisted from offending before graduating from college. In addition, postsecondary education has been shown to have a profound impact on desistance for some ex-offenders (Shover, 1996). Horney and associates (1995) found career criminals who had enrolled in school reduced the likelihood of overall offending by 52 percent and drug crimes by 61 percent. As ex-offenders increase their ties to conventional society through education, they not only improve their odds of desistance (Rand, 1987), but through the acquisition of these specialized skills also improve their attractiveness on the job market (DiMaggio and Mohr, 1985). Thus, education, directly and indirectly (e.g., obtaining a high-quality job), is able to increase the chances of desistance from the criminal life.

Not surprisingly, educational institutions also play a pivotal role on illicit drug involvement (Mensch and Kandel, 1988; Schulenberg, Bachman, O'Malley, Johnston, 1994). For example, using the National Longitudinal Survey of Young Adults, Mensch and Kandel (1988) explored the effects of dropping out of high school on substance abuse. They discovered that high school dropouts were more likely to use illegal drugs and cigarettes than adolescents who earned a diploma. Furthermore, juveniles who used drugs had increased odds of dropping out of high school and those individuals who started this behavior at an earlier age were at a greater risk. Another study conducted by Schulenberg and associates (1994) found that there was a negative relationship between
high school GPA and illicit drug involvement. That is, students with higher GPA's were less likely to engage in using drugs after graduating from high school. Consequently, students who are committed to attaining their high school diploma not only are able to shield themselves from the drug subculture, but also are able to gain the essential repertoire for subsequent educational and employment opportunities.

**Employment.** As an individual enters into adulthood, they are encountered with the formidable task of finding employment in order to survive. This transition from adolescence is a principle adjustment in everyday lives for young adults (Adams, 1997). Those individuals who fail to find adequate employment are left in a difficult position. Not only do they lack the financial means to survive, but also are left with a vast amount of unoccupied time. As a result, unemployed individuals lack a crucial bond to society (Hirschi, 1969), and have more opportunities (e.g., more time), and incentives (e.g., financial gain, frustration) to engage in criminal behavior. Therefore, periods of unemployment have been linked to higher rates of property crimes since these offenses lead to an acquisition of financial gain (Farrington, Gallagher, Morley, St. Ledger, and West, 1986). Additionally, high rates of unemployment have been characterized by higher rates of incarceration (Grant and Martinez, 1997). Subsequently, a number of theories have been used to help explain the impact of unemployment on offending. For instance, strain theory postulates that disadvantaged youths do not have legitimate financial means to obtain material goods, thus they engage in criminal behavior to acquire wanted items (Cloward and Ohlin, 1960). Since preceding research does show an association between unemployment and criminal behavior, recent studies investigating
desistance have also focused on employment as a social bond (e.g., Sampson and Laub, 1993; Uggen, 1999).

However, a counter-argument to the aforementioned association between employment and offending also exists. Instead of employment impeding criminal behavior, there is evidence showing that working adolescents may actually experience higher rates of delinquency than unemployed juveniles (Ploeger, 1997; Wright and Cullen, 2000; Wright, Cullen, and Williams, 1997). For instance, Wright, et al. (1997) found individuals who were employed while attending school participated in more delinquent behavior than their counterparts. Another study conducted by Wright and Cullen (2000) examined the nature of work-related juvenile delinquency using a sample of high school seniors. They discovered that delinquent co-employees and innate criminal tendencies influenced this form of delinquency. Moreover, occupational delinquency was not just limited to the employment establishment, but also extended to outside the working atmosphere. Thus, although there is evidence demonstrating that employment reduces juvenile crimes, there is also ample support to show the opposite—employment increases criminal behavior.

While education tends to decrease the propensity for using drugs, employment may actually enhance substance use for adolescents (Ploeger, 1997). During the work experience, employees are introduced and develop relationships with a variety of fellow co-employees. Through this job opportunity, juveniles are able to escape the supervision of their parents, and also may be introduced to deviant peers. Ploeger (1997) found that youths who were employed were more likely to use alcohol and illicit drugs. Furthermore, this relationship was determined to be explained by exposure and contact
with deviant friendship networks. Kandel and Davies (1990) investigated the effects of employees' use of illegal substances on their present and future job careers. Such drug use was found to have negative impacts upon job mobility, as well as frequency and duration for unemployment. In addition, drug use also had a profound and negative influence on job performance. Depression is another detrimental aspect of youth employment that increase the odds of escalation in drug use (Kandel and Davies, 1982). One study, conducted by Shanahan and associates (1991) found that young adolescents who worked were affected by a depressed mood. Thus, employment may also indirectly increase drug use through the relationship between work and depression. Although juveniles may feel that they need employment in order to generate money, they may also be exposing themselves to an environment that breeds delinquency.

Just as employment and unemployment have been linked to offending, there is evidence that employment has been able to facilitate the desistance process for previous criminals (Meisenhelder, 1977; Sampson and Laub, 1993; Shover, 1996; Uggen, 1999). For instance, Shover (1996) found a key motivating factor for offenders turning away from crime and moving towards a conventional way of life was finding legitimate employment. Since these employed individuals spent a large amount of time performing work duties, they articulated there were not as many moments to partake in criminal actions. In addition, since they had a stake in conformity, the consequences for illegal behavior were much more severe. Not only would they be subjected to the criminal justice system, but they would also lose their job. In other words, the rewards they were gaining from employment were highly valued, and if they were caught offending it would more than likely result in termination from their job, and as a result, losing a major bond
to conventional society. Similar results were found in a study conducted by Hagedorn (1994). Former drug dealers, who had ceased participation for the past five years, were characterized by working full-time during this period. Moreover, most of the current drug dealers bounced back and forth between legitimate employment and selling drugs. Even though these gang members earned much more money from the drug market, they continually strived to find lawful jobs. Hence, it seems individuals who desisted from crime were more likely to be employed, whereas those seeking to exit the criminal life were searching for licit employment (Hagedorn, 1994; Shover, 1996).

Yet, a study by Horney and associates (1995) found employment was only weakly related to inhibiting individuals from involvement in criminal behavior. However, they attributed these findings to their rudimentary measures of employment. For instance, they simply asked if the respondent was employed—they did not ask for elaboration in terms of part-time or full-time and permanent or temporary positions. Thus, this measure did not adequately grasp the degree of attachment to the workplace. Nonetheless, employment alone was not found to be a significant factor in the desistance process. Therefore, other aspects surrounding the issue of employment may be more important than just measuring whether an individual is employed.

Employment seems not to be the only factor in perpetuating the desistance process. Job stability (Sampson and Laub, 1990, 1993) and quality (Uggen, 1999) also play an important role in deflecting offenders away from future criminal behavior. For instance, Sampson and Laub (1990, 1993), examining samples of delinquent and non-delinquent individuals, found job stability to have a large inverse relationship, in both groups, for adult crime and deviance. Furthermore, job stability for young adults also led
to a decrease in alcohol use, general deviance, and arrest in future adult years. In regards
to job quality, Uggen (1999), basing his explanation primarily on Merton's (1938) anomie
theory, examined the relationship between job quality and future criminal behavior
among a sample of released high-risk offenders. Using data from the National Supported
Work Demonstration and the 1977 Quality of Employment Survey, high job quality was
found to have a negative effect on both economic and non-economic criminal actions.
Thus, employment by itself can reduce the chances of future criminal behavior, but
employment characterized by stability (Sampson and Laub, 1990, 1993) and high quality
(Uggen, 1999) is most likely to facilitate desistance from crime.

Finding stable, high quality employment is a difficult undertaking for convicted
felons (Freeman, 1992). Individuals entering into low-level jobs can no longer work their
way to the top of a business due to educational requirements (Clausen, 1991). Therefore,
gaining a high quality job is essential because hard work and dedication no longer result
in promotions and advancements in the employment world. Hagan (1991) found former
delinquency was likely to have a negative effect on acquiring prestigious employment for
young adults. Yet, the consequences of previous delinquency on young adulthood
occupational attainment can be buffered if the individual is not from a working-class
background (Hagan, 1991). This finding could lead to a devastating cycle.

Underprivileged, delinquent children attempting to raise their social standing may face
difficult obstacles keeping them from enhancing their socioeconomic status and in turn
perpetuating this cycle from generation to generation. However, delinquents not from
working-class origins are able to escape this cycle and maintain or increase their already
upper-class, privileged standing in society. Therefore, stable, high quality occupational
attainment is able to augment the desistance process, especially for individuals from nonworking-class roots. Subsequently, employment enhances the likelihood of desistance from crime, but occupations exemplified by stability and high quality seem to be more important in attaching the individual to the workplace, and thereby reducing future offending.

**Marriage.** Marriage is a foremost experience in the lives of many individuals. Through marriage, individuals are able to establish strong social bonds to their spouse and possible subsequent family members (e.g., children), thereby facilitating the desistance process (Meisenhelder, 1977). There has been a considerable amount of research showing that marriage increases desistance from crime. (e.g., Horney, Osgood, and Marshall, 1995; Laub, Nagin, and Sampson, 1998; Sampson and Laub, 1993;) provided the spouse does not have a criminal record, in which case, marriage can perpetuate the tendency for offending (West, 1982). Using qualitative data obtained from Milwaukee gang members, Hagedorn (1994) found gang members who were married or had a serious girlfriend and had a vested interest with their family were more likely to cease participation in the illegal drug market. For instance, after one gang member was asked what major changes occurred during the past five years to deflect his life away from crime, he replied, "...I had a family, you know, and kids, and I had to think about them first..." (p. 207). In a similar vein, Shover (1996) focused his interviews on six career criminals. Again, marriage played a central role in desisting from criminal behavior, which becomes evident through the dialogue with the offenders. For instance, one respondent stated, "...by meeting the woman that I met it just turned my life completely around..." (p. 126). By using qualitative data, Hagedorn (1994) and Shover
(1996) were able to probe more deeply into the lives of habitual offenders in order to ascertain factors contributing to their desistance from crime. Through these two studies, marriage emerged as a pivotal reason for desistance from crime.

In addition to these qualitative studies, previous research has also engaged quantitative methods to examine marriage and desistance. Horney, Osgood, and Marshall (1995) used data consisting of newly convicted male offenders in order to investigate monthly changes in offending and life conditions over a nine-month time period. Employing the logic of social control theory, particularly informal mechanisms, they found men who were living with a wife were least likely to commit crimes in the short-term. Moreover, they posit a secure marriage and attachment to a spouse could reduce long-term activity in criminal behavior. Elaborating upon the effects of a good marriage on desistance, Laub, Nagin, and Sampson (1998) used a dynamic statistical model (see Nagin and Land, 1993) to reanalyze data from the Gluecks' famous study. From this analysis, they found marriage early in life, coupled with social cohesiveness, leads to a reduction in offending. These conclusions are similar with the findings of Sampson and Laub (1993) and in accordance with their theory of informal social control.

While marriage seems to be a central factor in the desistance process, its effects are not without dispute. Recently, Warr's (1998) explanations between marriage and desistance were contrary to what Sampson and Laub (1993) concluded. Although, Warr agreed with the findings, he took issue with their interpretations—that marriage leads to a reduction in criminal behavior. Using data from the National Youth Survey (waves 5 and 6), Warr discovered once an individual marries, the amount of time spent with peer associates is cut in half, with an average reduction of ten hours per week. After age 20,
time spent with friends is replaced with involvement in family activities. Instead of
marriage directing individuals away from criminal behavior, Warr (1998), basing his
findings on the major facets of differential association/social learning theory, speculated
marriage was spurious because it is the reduction in the amount of time spent with peers
that accounts for this change. Since it is a well-known fact the majority of criminal
behavior is committed in groups with other peers, the reduction in the amount of time
spent with friends decreases the opportunities and influences to partake in criminal
behavior as well. Although Warr (1998) asserts it is the diminishing amount of time
spent with friends that accounts for the reduction in criminal and delinquent behavior, he
also articulates it is very difficult to establish temporal order since attachments to
marriage and peers are highly interrelated. Nonetheless, Warr (1998) concludes it is the
reduction in the amount of time spent with peers, not marriage, that is linked to a decline
in criminal behavior.

A myriad of academic research has centered on life-course transitions that aid in
cessation from using drugs (e.g., Chen and Kandel, 1998; Esbensen and Elliott, 1994;
Warr, 1998; White and Bates, 1995; Yamaguchi and Kandel, 1985). For instance,
individuals who are married or are expecting children are likely to desist from using
cannabis (Chen and Kandel, 1998). In a similar vein, White and Bates (1995) discovered
that cocaine users who were married, had children, and did not have much contact with
friends who used illicit drugs were more likely to desist from using cocaine. Esbensen
and Elliott (1994), ascertained similar findings, which corroborated these previous
studies. Thus, it appears that life-course transitions as they relate to the institution of the
family, especially marriage, impact desistance from illegal drug use in much the same manner as they assist cessation from other forms of criminal behavior.

Although there is controversy surrounding the effects of marriage on desistance, it seems marriage plays a critical role in the desistance process. Even when high-rate offenders enter into marriage they are less likely to continue their criminal behavior (Farrington and West, 1995). These high-rate offenders, or career criminals, are not very responsive to correctional rehabilitation efforts (Martinson, 1974), yet marriage is able to decrease their propensity of offending. As a result, marriage, as an informal social control, is able to prevent offending not only in low-rate offenders, but high-rate offenders as well (Horney, Osgood, and Marshall, 1995). Thus, marriage will be viewed as a key facet in the desistance process.

Based on the preceding evidence, it appears the life-course transitions theory is adequately able to account for illicit drug use throughout life. While many studies have employed this framework to explain substance abuse, little attention has been placed on residential setting. Thus, in order to fully grasp rural-urban differences in illegal drug and criminal behavior the following section will explore this topic more closely.

**URBAN AND RURAL SETTINGS**

Since it is a well-known fact that serious criminal and deviant behavior is more prevalent in urban locales, a host of theories have been developed to account for these higher rates. Beginning in the early part of the nineteenth century (e.g., Wirth, 1938) and gaining increased interest with the Chicago school of thought (e.g., Shaw and McKay, 1942, 1969), theorists attempted to explore the factors contributing to higher rates of
social problems in urban localities. However, by focusing on these highly populated regions, crimes committed in rural vicinities were generally overlooked by criminologists. As a result, the majority of criminological research, including issues dealing with the life course and desistance, has overwhelmingly drawn samples from metropolitan and urban areas (Laub and Lauritsen, 1993), thereby neglecting an important topic—residential setting. Just as life course research has been criticized for being gender biased (see Uggen and Kruttschnitt, 1998), it appears to be partial to urban settings as well. For instance, Sampson and Laub (1993) arrived at their integrated theoretical framework by analyzing an urban sample of Boston merchant marines. Yet, in order to fully-develop and test existing criminological theories, rural-urban differences need to be taken into account.

Different geographical contexts influence a wide array of aspects inherent in everyday life, including employment opportunities (Elder, Robertson, and Conger, 1995), family relationships and expectations (Shanahan, Elder, Burchinal, and Conger, 1996), developmental and socialization patterns (Brooks-Gunn, Duncan, Klebanov, and Sealand, 1993; Elliott, et al., 1996; Freudenburg, 1986), and tolerance thresholds (Wilson, 1991; Abrahamson and Carter, 1986). Moreover, serious criminal and illegal substance use appears to be substantially more abundant in urban areas (Weisheit and Wells, 1996) and subsequently, contacts with the police are more frequent in these highly populated districts (Shannon, 1988). Furthermore, Arum and Beattie (1999) found individuals from rural origins were less likely to be incarcerated when controlling for education. Thus, not only are urban locations more susceptible to criminal offenses, but also offenders from these areas are more likely to be questioned by law enforcement agencies and if
convicted, have a greater chance of being incarcerated. Since urban neighborhoods have a higher prevalence of offending, more emphasis has been placed on urban localities, while rural-urban differences in desistance from criminal behavior has been a relatively ignored area.

Research has shown that individuals from rural areas use marijuana less often than people residing in urban vicinities (Johnston, O'Malley, and Bachman, 1988). While most research has examined drug use within the urban context, rural environments are also important to the drug industry because such areas pose several problems to the entire nation (Weisheit, 1993). Not only are rural communities negatively affected by the use of illicit drugs, but also these sparsely populated neighborhoods are becoming more involved in the production and distribution of such substances (Weisheit, 1993). In order to expand the drug literature and gain a better perspective of overall drug practices, some studies have examined the differences between these two localities. Attention will now turn to research examining the differences between deviant behavior and illicit drug patterns in rural and urban environments.

In order to explore the disparities in criminal behavior between rural and urban vicinities, a variety of theories have been employed and developed to explain this phenomenon. For instance, Lyerly and Skipper (1981), using Hirschi's (1969) social control theory, examined the discrepancies of delinquency rates in these two structural locations. These scholars were interested in how the social bonds were affected by residential setting. In other words, Lyerly and Skipper (1981) attempted to test the strength of social control theory to see if the social bonds were stronger in rural or urban areas. Using a sample drawn from two juvenile detention centers in Virginia, they found
adolescents with lower levels of commitment engaged in more delinquent behavior (including marijuana use), and did so more often. However, commitment levels did not differ based on residential setting. That is, when controlling for commitment, the relationship between delinquency and location remained significant.

Despite the findings from the aforementioned study, Gardner and Shoemaker (1989) attempted to rectify some of the shortcomings in the work, particularly reliability and generalizability issues. Using a non-random sample of rural and urban respondents, these scholars analyzed all of the facets relevant to social bonding theory. Based on the results, they concluded the social bonds were stronger in rural areas as compared with urban neighborhoods. Yet, their research did not adequately address the generalizability issue because they employed a non-random sample. However, in each of these studies support was found for higher delinquency rates, including measures of illicit drug use, in urban areas, which may be due partially to stronger bonds in rural vicinities.

A study by Krohn and associates (1984) examined social learning (see Akers, 1985) and social bonding theories in order to assess which one of the theories was best able to explain rural-urban community differences. They divided the sample of male and female students residing in the Midwest into four categories: farm, rural-nonfarm, suburban, and urban. Analyzing self-reported alcohol and marijuana use, these researchers concluded that social learning and subcultural measures were better able to account for rural-urban differences in illegal drug use than social bonding variables. Moreover, Krohn et al. (1984) discovered the differences in deviant behavior among the four categories of residential did not fall along a continuum; rather farm and suburban communities were alike, whereas rural-nonfarm and urban areas were more comparable.
Yet, the key finding in this study was social learning/subcultural variables were best able to explain the differences in residential location.

Ingram (1993), using data from the Youth in Transition studies, attempted to test the determinist theory set forth by Wirth (1938). This theory maintains "that the urban character of a settlement, as reflected in size, density, and heterogeneity, influences lifestyles, attitudes, and social bonds of the residents (often called "urbanism"), which in turn affect the likelihood of crime and deviance" (Ingram 1993:192). Ingram (1993) did not find support for a positive relationship between type of place and delinquency that should be mediated by "urbanism" or the pejorative consequences of residing in a densely populated environment. Thus, he concluded the determinist theory is not adequately able to account for the relationship between size of place and delinquent behavior.

Tittle (1989) examined the determinist, compositional/systemic, and subcultural perspectives and tested how well each of these is able to predict "urbanism" and deviance, such as rates of marijuana use. Using data from 1,993 respondents aged 15 and over, Tittle (1989) found the most support for the subcultural theory. Evidence for the remaining two theories seemed to be mixed. However, Tittle (1989) attributed the weak support for these theories to vague concepts in the theories. Moreover, if these three theories were more specific and meshed together forming one theory, a better, more powerful and predictive theory of urbanism could ensue (Tittle, 1989).

Although a moderate number of scholars have examined the differences between rural and urban vicinities, most do not account for these disparities empirically. However, Ousey and Maume (1997) attempted to test the determinist, compositional and subcultural theories empirically to see which theory was best able to explain rural-urban
behavioral differences. Data used for the study came from the National Youth Survey (waves 1-5), and were analyzed by using a pooled time-series cross-sectional research design. The behavior of interest in this study was a rating of self-reported marijuana use. When controlling for exposure to delinquent peers and the level of peer attachments, Ousey and Maume (1997) found the rural-urban dummy variable was not significant in predicting marijuana use. Yet, this finding could be attributed to several limitations (Ousey and Maume, 1997). First, some of the data are about twenty years old, and thus may not be generalizable to modern society. Furthermore, marijuana use was the only behavior of concern, thereby limiting the scope of the study. Finally, the sample was composed of adolescents, thus neglecting to account for adult behavioral differences in different structural locations.

While previous research has attempted to account for rural-urban differences in criminal and deviant behavior, studies have not incorporated the effects of structural location when examining the life course perspective as it relates to desistance from marijuana. The purpose of this paper is to void part of this gap by drawing from the major facets of life course theories and presenting an analysis of desistance from crime as it pertains to urban and rural settings. In addition, each of the bonds (marriage, employment, and education) will be examined in-depth in order to understand the strength of each bond as it relates to the desistance process. While it may be that developing just one bond will result in the same outcome (desistance from crime) as having all three, another explanation could be that one bond in particular plays a more central role in the desistance process. In other words, each bond will be examined by itself and together in order to ascertain the power of each bond and test if there is a
cumulative effect. Moreover, each bond will be analyzed to see if one bond is more powerful than the others. Finally, the bonds will be explored to understand how each responds to the environmental setting (rural and urban). Based on this study, a deeper understanding of life course issues, as they relate to desistance and rural-urban differences, should become apparent.

From these general research areas I was able to generate three different hypotheses. First, I feel that individuals who possess more bonds will be more likely to desist from criminal behavior than those who are less bonded to society. Secondly, I feel that the most powerful bond, as it relates to the desistance process, is marriage. The rationale behind this statement is that marriage is an intimate relationship with another person. On the other hand, employment and education are not able to provide personal, emotional support. Finally, in respect to the examination of desistance in different structural locations (rural/non-rural), I hold no *a priori* expectations because this has been a relatively neglected topic in the study of life course research.
CHAPTER THREE

Methodology

Data. Data for this study come from waves 6 and 7 of the National Youth Survey (NYS) (Elliott, 1994, 1996), an ongoing study of delinquent behavior and drug use administered under the supervision of Delbert S. Elliott and the Behavioral Research Institute in Boulder, Colorado. The NYS is a multi-year panel study of a national probability sample of 1,726 youths aged 11-17 in 1977 (see Elliott, Huizinga, and Ageton, 1985). Data for wave 6 was collected in 1983, when the remaining 1,496 respondents were between the ages of 18 and 24. Wave 7 data, collected in 1987, included 1,384 respondents who were 21-27 years old. From wave 1 through wave 7 the attrition rate was about 20%, yet researchers have concluded that there does not seem to be systematic selection bias for those still participating in the panel.\(^2\) The NYS is compatible for this study because it asks a wide array of questions concerning delinquent and criminal behavior. Moreover, it also has a host of indicators dealing with the aforementioned social bonds and has measures of residential setting. Thus, the NYS is well suited for this study because it is a longitudinal data set and asks a variety of questions dealing with the topic at hand.

Desistance. In order to explore the desistance process, this study will rely on the model set forth by Esbensen and Elliott (1994). This first requires identification of

\(^2\) MacMillan (2000:560), comparing the composition of the seven waves of data concluded, "...that attrition was not seriously affected by age, sex, ethnicity, class, place of residence, and reported delinquency..."
regular marijuana users for each wave.\textsuperscript{3} Regular marijuana users were characterized as those respondents who had used marijuana three or more times in both years preceding the recall year. In other words, the recall year for wave 7 (which was conducted in 1987) would be 1986 and the years for determining regular users would be 1984 and 1985. To elaborate, if a respondent had used marijuana three or more times in both 1984 and 1985 then they were classified as a regular user. The same logic was also used for wave 6. \textit{Desistance} is treated as a dummy variable: regular users who used marijuana 2 times or less in the recall year were assigned a code of 1; if they continued to use marijuana (3 or more times in the recall year) they were coded as 0. That is, if an individual used marijuana 3 or more times in both 1984 and 1985, but quit in the recall year (1986) they would be viewed as desisting, and thus would be assigned a 1.

In order to analyze the desistance process in a longitudinal nature, a group of regular offenders (marijuana users) must first be identified. Consequently, regular marijuana users were identified based on the previously mentioned conditions. Since this considerably reduces the original sample size (N=2,880), both waves were pooled together to maximize the sample size. The pooled sample contains 726 regular marijuana users. Since the desistance variable is binary (0, 1), the multivariate analysis used in this study is logistic regression. Thus, in these models 1 is equal to desistance, whereas 0 is equivalent to persistence.

\textsuperscript{3} Although marijuana use may not be viewed as a serious criminal action, it continues to be criminalized and used regularly by individuals. Other illegal actions, such as cocaine use and minor theft, were pondered for use in this study, however the sample sizes were very small. Furthermore, other deviant behaviors (e.g., alcohol and tobacco use) were also considered for this study, yet it was decided that since they are not illegal for the entire population that they would not be adequately able to grasp the concept of criminal behavior. Thus, marijuana use was used because it is illegal, yet still is used by a vast array of people.
**Independent Variables.** In order to adequately measure the three life course transitions of interest—education, employment, and marriage—a variety of independent variables were employed to grasp the effects of these transitions. First, a dummy variable was used for marital status: 1 was used to indicate that the respondent was *married*; single, divorced, separated, and widowed were coded 0. As indicated in Table 1, over one-third of the pooled sample was married, while about one-fourth of the regular marijuana users were married. *Education* was also measured as a dummy variable: 1 indicated that the respondent was a student in college, business/vocational school, or some form of adult educational program; 0 if they were not enrolled in any such courses. Again, Table 1 illustrates that more respondents from the total NYS sample were in college or some other educational program than the regular marijuana users. The status of *employment* is indicated by a 1 if the respondent held a job and worked 30 hours or more per week, while a 0 is coded if they were unemployed or worked less than 30 hours per week. Interestingly, a higher percentage of regular marijuana users, as compared with the pooled NYS sample, reported being employed. This observation is in accordance with the findings of Ploeger (1997).

In addition to these measures, several control variables were also included in the analysis. A dummy variable for gender was used, which was equal to 1 for *males* and 0 for females. According to Uggen and Kruttschnitt (1998) gender plays an integral part in life course issues, and the desistance process may very well be affected by the sex of the individual. A dummy variable for ethnicity was also included with a 1 indicating the respondent was *nonwhite*, and a 0 representing a respondent who was Anglo or White. In
Table 1. Demographic Information, Waves 6-7, and Regular Marijuana Users

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled NYS Sample¹</th>
<th>Regular Marijuana Users²</th>
</tr>
</thead>
<tbody>
<tr>
<td>... Is a Regular User</td>
<td>25.2%</td>
<td>—</td>
</tr>
<tr>
<td>... Desisted From Marijuana</td>
<td>—</td>
<td>14.2%</td>
</tr>
<tr>
<td>... Lives in a Rural Setting</td>
<td>22.4%</td>
<td>16.1%</td>
</tr>
<tr>
<td>... Is a Male</td>
<td>51.1%</td>
<td>61.8%</td>
</tr>
<tr>
<td>... Is in a College Program</td>
<td>30.6%</td>
<td>26.6%</td>
</tr>
<tr>
<td>... Is Employed</td>
<td>72.4%</td>
<td>79.3%</td>
</tr>
<tr>
<td>... Is Nonwhite</td>
<td>20.1%</td>
<td>15.3%</td>
</tr>
<tr>
<td>... Is Married</td>
<td>34.1%</td>
<td>27.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean (SD)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>... Hours with Friends</td>
<td>17.5 (17.6)</td>
</tr>
<tr>
<td>... Age</td>
<td>22.3 (2.5)</td>
</tr>
</tbody>
</table>

1. Waves 6 and 7 pooled (N = 2,880).
2. Regular marijuana users (N = 726) indicated that they had used marijuana three or more times in the years preceding the recall year.
order to address Warr's (1998) argument, *time spent with peers* and *contact with delinquent friends* was also included within the analysis.

Table 2 presents the age-graded nature of these life course transitions. For instance, for the pooled NYS sample the percentage of respondents who reported they were married increased linearly from age 18-27. However, those individuals who indicated they were employed hovered around 70-80%. As for college attendance a different pattern is apparent—college attendance increases from age 18 until it reaches a high at age 21, then decreases from age 22 until it reaches its lowest point for 27 year-olds. Regular marijuana users also demonstrate a similar pattern in respect to marriage and employment. However, enrollment in college or an adult educational program fluctuates without presenting an observable pattern.
Table 2. Life Course Transitions by Age and Group

<table>
<thead>
<tr>
<th>Age</th>
<th>Pooled NYS Sample</th>
<th>Regular Marijuana Users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Married</td>
<td>Employment</td>
</tr>
<tr>
<td>18</td>
<td>9.60%</td>
<td>43.3%</td>
</tr>
<tr>
<td>19</td>
<td>12.6%</td>
<td>60.9%</td>
</tr>
<tr>
<td>20</td>
<td>20.5%</td>
<td>68.6%</td>
</tr>
<tr>
<td>21</td>
<td>27.3%</td>
<td>75.7%</td>
</tr>
<tr>
<td>22</td>
<td>32.7%</td>
<td>74.5%</td>
</tr>
<tr>
<td>23</td>
<td>38.0%</td>
<td>74.8%</td>
</tr>
<tr>
<td>24</td>
<td>45.9%</td>
<td>81.2%</td>
</tr>
<tr>
<td>25</td>
<td>54.4%</td>
<td>80.0%</td>
</tr>
<tr>
<td>26</td>
<td>53.2%</td>
<td>76.8%</td>
</tr>
<tr>
<td>27</td>
<td>57.5%</td>
<td>80.6%</td>
</tr>
</tbody>
</table>

1. Waves 6 and 7 pooled (N = 2,880).
2. Regular marijuana users (N = 726) indicated that they had used marijuana three or more times
Finally, a dummy variable was developed to grasp the effects of residential location in the desistance process. This variable was coded 1 if the respondent lived in a rural setting, 0 if otherwise.\(^4\) The NYS specifies that individuals residing in an area with a population of less than 25,000 and are not within the boundaries of a Standard Metropolitan Statistical Area (SMSA) or Urbanized Area (UA) are viewed as living in a rural community. Non-rural locations would be those areas with more than 25,000 people and portions of UA's and SMSA's. Referring to Table 1, it is interesting to see that non-rural respondents are more likely to regularly use marijuana as compared with their rural counterparts. Table 3 presents the distribution of the life course transition and other variables among rural and non-rural settings. While most of the variables are similar between these two sub-samples, it is interesting to note that more non-rural respondents desisted from using marijuana.

\(^4\)The logic behind collapsing suburban and urban settings into a non-rural measure was modeled after Matsueda (1992). Using the NYS, Matsueda (1992) combined rural and suburban locations into a non-urban category. Ousey and Maume (1997) followed this strategy when they used a rural/non-rural variable. After an initial analysis they concluded that there was no difference in marijuana use rates between suburban and urban, thus they combined these two structural locations resulting in two categories—rural and non-rural.
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<tr>
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<th>Rural Respondents</th>
<th>Non-Rural Respondents</th>
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Table 3. Life Course Transitions in Rural and Non-Rural Settings Among Regular Marijuana Users (N = 720)
CHAPTER FOUR

Findings

As a first step a multivariate analysis predicting marijuana use was performed. These models will be used for comparison purposes with the multivariate analysis conducted on desistance from marijuana. Following the logic by Ousey and Maume (1997), the structural location measure (rural vs. non-rural) was first introduced followed by other covariates in subsequent models. Table 4 presents the findings from the multivariate analysis predicting marijuana use. A negative and significant relationship between environmental setting and marijuana use appears in Model 1 when controlling for each wave of the data (wave 7 vs. wave 6). When exponentiating the log odds coefficient ($b = -.52$), the association is interpreted as respondents from rural locations are less likely to have used marijuana in the past year as compared with individuals residing in non-rural areas (odds = .59).

Table 4 also displays the effects of age, sex, ethnicity, and the life course transition variables. Model 2 introduces the age variables without any additional significant findings, yet structural location remains significant. Each of these age categories continued to be non-significant throughout the subsequent models. Two control dummy variables—male and nonwhite are added in Model 3. Each of these variables, along with residential location, is significant. Model 4 introduces the dummy life course transition variables. Each of these three variables are significant, as well as the residential setting variable, and the male and nonwhite dummy variables. First, it is important to note the negative and significant relationship between being married and
using marijuana. When exponentiating the log odds coefficient \( b = -.49 \), the relationship is interpreted as those individuals who reported they were married were less likely to use marijuana than single respondents (odds = .61). Another negative and significant association was found for those respondents who reported being in college or an adult educational program. Again, when exponentiating the log odds coefficient \( b = -.46 \), the relationship is inferred to be that those individuals who are in college are less likely to use marijuana (odds = .63). The final life course transition variable of significance—employment—can be interpreted as respondents who were employed and worked 30 or more hours per week are more likely to use marijuana (odds = 1.36). This finding supports the claim that employment can actually increase criminal behavior (see Ploeger, 1997).

In order to address Warr's (1998) argument, the variables of hours spent with peers and contact with delinquent friends are introduced in Model 5. Both of these variables are very valuable to the model, which is proven through the dramatic increase in Cox & Snell's \( R^2 \). It is also important to note the positive and significant relationship between both of these variables and the use of marijuana. Thus, this relationship is viewed as individuals who have marijuana-smoking friends are more likely to partake in using marijuana (odds = 29.63). In addition, respondents who spend more hours with their peers are also more likely to engage in marijuana use (odds = 1.57). With the introduction of these variables, the previous finding for the significant relationship between marriage and marijuana use disappears.
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Cox & Snell's $R^2$ | .01   | .02   | .04   | .05   | .24   |

*p ≤ .05; **p ≤ .01; ***p ≤ .001
Next, attention will move towards the models predicting desistance from the use of marijuana. These models are based on the sample of regular marijuana users (N=726), which were determined from the aforementioned criteria. Table 5 displays the results from the multivariate analysis predicting desistance. In a similar manner as the models predicting marijuana use, Model 1 introduces the residential setting variable along with a control variable for the wave (wave 7 vs. wave 6). The male and nonwhite dummy variables are entered into Model 2 and neither of these are shown to be significant. Model 3 introduces the variable of contact with delinquent friends. Referring to Table 5, there appears to be a significant and negative association between contact with delinquent friends and desistance from using marijuana. By exponentiating the log odds coefficient ($b = -2.31$), this relationship is interpreted as respondents who are exposed to deviant peers are less likely to desist from using marijuana (odds = .10). This significant relationship hold across subsequent models when additional covariates are entered into the analysis. Model 4 adds the variable of time spent with friends, and does not present a significant finding.

Model 5 begins to introduce the life-course transition variables. Unlike the models predicting desistance, these three bonds do not play a central role in the desistance process. However, initially college education displayed a significant and positive relationship with desistance, yet this finding disappeared when employment was entered into Model 6. Though, when marital status was introduced in Model 7, the significant finding between enrollment in college and desistance from marijuana re-emerged. When exponentiating the log odds coefficient ($b = .47$), the relationship is interpreted as respondents who were enrolled in an educational program were more likely
Table 5. Logistic Regression Models Predicting Desistance For Regular Marijuana Users (N = 713)

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*p ≤ .05; **p ≤ .01; ***p ≤ .001
to desist from marijuana (odds = 1.60). Finally, Model 8 added the age category variables. Of particular interest in this final model, was the significant findings for contact with deviant peers and enrollment in college. While exposure to delinquent friends decreased the likelihood of desisting (odds = .08), whereas attending an educational course increased the chances the respondent would desist (odds = 1.77).

Table 6 presents the findings for the logistic regression models predicting desistance from marijuana, by focusing on the effect of having all three life-course transitions (employment, education, and marriage).\(^5\) Similar to the models predicting desistance, which included the main effects, Model 1 introduces the rural dummy variable along with a control for each wave (wave 7 vs. wave 6). However, Model 1 also enters the effect of having all three bonds. As demonstrated from Table 6, there appears to be a significant and positive relationship between having all three bonds and desistance from marijuana. When the log odds coefficient \((b = .90)\) is exponentiated the relationship is interpreted as respondents who were characterized by having all three bonds were more likely to desist from using marijuana (odds = 2.47). This significant finding holds in Model 2 when the male and nonwhite dummy variables are introduced, but disappears in the following models. Model 3 enters the variable of contact with delinquent peers, which is viewed as a significant and negative relationship in regards to desistance. Model 4 introduces the variable of time spent with peers, followed by the age category

\(^5\)Due to issues surrounding multicollinearity, the main effects were not entered into these models. Moreover, after an initial analysis of other interaction effects (e.g., employed and married; married and enrolled in college; enrolled in college and employed) did not yield any significant findings they were not taken into consideration in this analysis. Consult Jaccard, Turrisi, and Wan (1990) for a comprehensive discussion on how to deal with multicollinearity with interaction effects.
variables in the final model. In this last model, the only significant finding (besides age 25) is contact with deviant friends. Again, by exponentiating the log odds coefficient ($b = -2.48$) this relationship is inferred to be that respondents who had marijuana-smoking friends were less likely to desist from marijuana (odds = .08). These main findings along with the lack of several hypothesized findings will be discussed in the following section.

Table 6. Testing For a Cumulative Effect: Logistic Regression Models Predicting Desistance For Regular Marijuana Users (N = 713)

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* p ≤ .05; ** p ≤ .01; *** p ≤ .001
CHAPTER FIVE

Conclusion

This study focused on a variety of topics surrounding life-course criminology. The first centers on rural and non-rural residential settings as they relate to the desistance process. Although rural respondents were less likely to use marijuana than their non-rural counterparts, surprisingly, there was not a significant difference between rural and non-rural locations in the desistance process. While previous researchers (see Gardner and Shoemaker, 1989; Krohn, Lanza-Kaduce, and Akers, 1984) have maintained that rural/urban differences exist in society today, Fischer (1980) presents an alternative argument. Fischer (1980) suggests that rural-urban differences have been buffered by the advent of communication advancements. Since Fischer's research was written, a plethora of technological inventions, such as the Internet and satellite television, have had a profound impact on diffusing ideas throughout the world, including urban fads and trends to rural settings. In much the same manner as Evans, et al. (1999) found rural gang members to be similar to urban members, the rural desistance process, perhaps, is comparable to the urban desistance process. However, this is not adequately able to explain the higher rates of using marijuana in non-rural settings. While it may be non-rural areas provide adequate sources for urbanites to acquire and experiment with illicit drugs (e.g., marijuana), whereas rural residents may be less able to obtain and use marijuana as freely. However, marijuana-using individuals from rural locales may be more committed to sustaining their habit, thereby persisting with their marijuana-using lifestyle no matter how many obstacles they need to overcome to purchase marijuana.
Thus, initial use of marijuana by rural residents would be less than individuals from urban environments, thereby accounting for the smaller percentage of regular marijuana users in rural locations. Yet, the desistance process may be unaltered by different structural locations, possibly as a result of mass communication technology.

Attention will now turn to the effects of the various life-course transitions on desistance from marijuana. When comparing regular marijuana users who were married versus those who reported being single, the desistance process is virtually unchanged. The lack of a significant finding for married individuals could be due to several possibilities. First, the variable of marital status was dichotomous—either married or not married. However, previous scholars (Sampson and Laub, 1993) have posited that it is not just being married, but the level of commitment an individual feels toward their spouse. Laub, Nagin, and Sampson (1998) built upon this idea and explored the relationship between the quality of the marriage and desistance from crime. They found that higher quality marriages aided in the desistance process. Moreover, good marriages took time to assist in desistance from crime; it was a gradual and cumulative process. In other words, married individuals were more likely to desist, however the effects of marriage on desistance were not immediate—strong marital bonds took time to develop, and in time, facilitated the desistance process.

In order to have fully-grasped the effects of a high quality marriage, several other factors could have been taken into account. For instance, the criteria for being married could have been supplemented by information regarding how the individual felt about his/her spouse in order to tap the quality and commitment within the marriage. In addition, deviant actions by the individual's spouse can also perpetuate the inclination for
offending (West, 1982). Thus, the marital variable could also have measured spouse's influence (either positive or negative). Since this sample is composed of relatively young respondents (18-27 year olds), most married individuals are "newlyweds" and have not had a long period of time to develop their relationship with one another. Thus, the gradual and cumulative impact of marriage on desistance may not have had adequate time to breed. Furthermore, instead of just focusing on marital status, a measure incorporating cohabitation between significant others may also facilitate the desistance process. Recently, cohabitation has replaced the role of marriage, and has been shown to account for declines in both first marriages and remarriages (Bumpass, Sweet, and Cherlin, 1991). Thus, cohabitation may very well have a vital impact on the inhibition of criminal conduct.

Employment did not have a significant impact on desistance from marijuana. By not just looking at whether the respondent had been employed, but also determining if the individual worked 30 or more hours per week, this variable was able to grasp commitment to work. However, this measure did not employ a criterion for quality of the job. Uggen (1999) discovered that better jobs facilitated the desistance process. Thus, by not using a measure for quality of employment, white-collar and blue-collar jobs were indistinguishable from each other. However, it may be that employment does not positively influence desistance; it may in fact lead to more criminal behavior (see Ploeger, 1997; Wright and Cullen, 2000). Although there was not a significant finding in regards to employment and desistance, future research may wish to build upon this variable by also taking into account annual income in order to ascertain the quality of employment.
The one significant finding among the life-course transitions variables was the impact of education on the desistance process. Respondents who were enrolled in an academic program, such as college courses, vocational programs, or an adult educational series were more likely to desist from smoking marijuana. This finding may be a result of degree seeking individuals wishing to perpetuate their socioeconomic standing by obtaining a higher education. Moreover, these educational students may not have as much time, money, or pressure to pursue their previous drug using lifestyles. While marriage and employment are frequent occurrences within society, higher education is a personal choice not readily available or valued by everyone. Thus, individuals deciding to enhance their educational level may possess certain skills and traits (e.g., maturity), which also are the same characteristics that assist them in desisting from using marijuana.

The cumulative effect of having all three life-course transitions bonds was not found to have a significant impact on facilitating the desistance process. One possible explanation for this non-significant outcome is that the bonds may offset each other. That is, education has a positive effect on desistance, however employment and marriage may actually assist in maintaining this illegal conduct. In essence, the bonds cancel each other out. In addition, due to the simple measures for these life-course variables (e.g., not ascertaining the quality of marriage or employment) may also have contributed to a non-significant effect on the desistance process. Nonetheless, this analysis did not lend support to a cumulative effect for having all three life-course transitions bonds.

In both analyses, predicting marijuana use and desistance, contact with delinquent peers was significant. The more marijuana-smoking friends that an individual has the more likely they are to use marijuana, and the less likely they are to desist from using
marijuana. This finding is congruent with the argument set forth by Warr (1998). Again, however, it is hard to disentangle time spent with peers and marriage. Yet, this paper did not find support for marriage facilitating the desistance process. While marriage may reduce the time spent with peers, marriage in and of it does not cause a respondent to refrain from using marijuana. Nonetheless, reducing the amount of marijuana-using friends an individual has, the more likely they are to desist from marijuana, and the less likely they are to begin using marijuana in the first place.

The previous discussion dealt with some of the possible rudimentary measures for the covariates used in the analysis. However, another limitation to this study was the dependent variable—marijuana. While some may question the rationale behind criminalizing marijuana, or not view the use of marijuana as a so-called "criminal behavior," it continues to be against the law to use and possess marijuana. Thus, the desistance process for this "soft drug" may be very different from other forms of illicit drugs or violent crimes. The aforementioned life-course transitions may not adequately impact desistance from marijuana, but may prove to be more beneficial in the desistance process of violent crimes, or other more potent and harmful drugs (e.g., heroin). Moreover, marijuana was chosen for analysis in this study because if its profound impact in this country. Marijuana is frequently portrayed in movies and is the focal point of discussion in classrooms, as well as governmental hearings. Using marijuana can also have potentially devastating impacts upon college-bound youth who are relying on financial assistance to augment their economic situation. Thus, marijuana may be a soft drug, albeit a destructive drug, but it continues to be used by a vast amount of individuals throughout the country. Despite these limitations, by exploring desistance from
marijuana by employing a life-course transitions approach, a deeper comprehension for the effects of different environmental settings as they apply to life-course criminology has become apparent.

While criminologists have long recognized the importance of residential location in the etiology of criminal behavior, life-course criminology has failed to take this topic into consideration. However, this study attempted to resolve this gap that exists in life-course criminology. Future research may wish to build upon this topic and remedy some of the previously mentioned shortcomings with this study. In addition, rural-urban differences may be more pronounced for other forms of illicit drug use and violent criminal actions. Moreover, other transitions, such as entrance into a military program, may prove to be a beneficial agent in the desistance process. Furthermore, it would be interesting to investigate the degree of exposure and access to various opportunities inherent in these different locations. For instance, persons residing in rural sites may not have the same educational, employment, and marital options as those available in more densely populated areas. Such research would be able to delineate whether the desistance process is manipulated by the ecological setting alone, or innate factors within each respective setting.
REFERENCES


