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THE IMPACT OF DETENTION ON JUVENILE RECIDIVISM IN MONTANA: IS THE
IMPACT OF DETENTION INFLUENCED BY OTHER FACTORS?

By

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Thesis

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The Impact of Detention on Juvenile Recidivism in Montana: Is the Impact of Detention Influenced by Other Factors?

Committee Chair: Dusten R. Hollist, Ph.D.

The purpose of this study is to identify the effect detention has on recidivism risk as well as to identify the degree to which the effect of detention on recidivism is influenced by other variables. The data for this analysis were collected by probation officers across Montana, using the Back on Track risk assessment instrument (N=840). Although detention was the topic of interest, this analysis also tested aspects of three popular criminological theories: social bond theory, self-control theory, and life-course persistent theory. Using logistic regression, the effects of detention and a variety of other risk factors are identified. Hypothesis one was not supported, detention alone did not significantly influence recidivism. Hypothesis two was supported, detention became significant and strongly influenced recidivism when examined in combination with other factors. Variables from self-control theory and those representing life-course persistence were supported although social bond theory was not. Findings from this study have the potential to inform policy makers and practitioners. Suggestions are made for future research.

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Table of Contents

Literature Review	2
Factors Influencing Recidivism	4
The Social Bond	7
Low Self-Control	8
Life-Course Persistence	9
Current Study	10
Hypothesis 1:	10
Hypothesis 2:	10
Methods	11
The Back on Track Risk-Needs Assessment Instrument	11
Sample	11
Measures	12
Dependent Variable	12
Predictor Variables	12
Analysis Strategy	16
Data	16
Technique	17
Process	18
Results	18
Discussion	20
Limitations	23
Future Research	25
Conclusion	26
Appendix A: Indices	28
Appendix B: Bivariate Correlation Matrices	33
Appendix C: Binary Logistic Regression Models	35
References	37

Juvenile crime is a serious issue in the United States. Juveniles under 18 years of age account for approximately 24% of the population (Census Bureau 2014). This segment of the population is responsible for over 10% of all arrests in the United States (FBI 2012). The goal of the juvenile justice system is to divert children from a life of crime while ensuring that the juveniles' best interests are met. If a juvenile offender's risks and needs are not appropriately addressed, the probability of recidivism and an adult criminal career can increase (see Holman and Ziedenberg 2006). In order to appropriately address a juvenile's risks or needs, empirically supported risk and protective factors must be identified and targeted.

Noting the increased use of detention while juvenile violent crime rates declined, from 1985 to 1995, the Annie E. Casey Foundation sponsored the Juvenile Detention Alternatives Initiative (JDAI). Across five locations, JDAI started as a five-year experiment to improve juvenile detention systems while reducing the unnecessary use of detention (Stanfield 1999). Building on the JDAI, Randall Shelden (1999) advocated the diversion of juveniles from detention and noted that although violence among juveniles is on the decline, the nation's juvenile justice system is particularly strained due to the demand for detention. Shelden (1999) provides several example locations where JDAI programs have been successful in reducing juvenile recidivism rates beyond traditional sanctions, such as detention. Barry Holman and Jason Ziedenberg (2006) provide compelling arguments against the use of detention among juveniles. The authors argue that the detention environment, the strain associated with being removed from one's environment, and the stigma of incarceration can all serve to exacerbate a juvenile's criminal propensities (Holman and Ziedenberg 2006).

Prior studies on offending have been limited in their ability to predict juvenile recidivism and results often account for around 20% of the variation in this outcome (Katsiyannis, Zhang, Barrett, and Flaska 2004). By including a greater number and wider variety of risk factors related to juvenile recidivism and criminological theory, the ability to predict this outcome should be strengthened.

Conclusions from this research can be applied to juveniles in order to manipulate dynamic risk factors and to prevent static risk factors. As some of the factors influencing recidivism also influence detention placement decisions and detention can possibly influence recidivism, a downward spiral can ensue when a juvenile's needs are not addressed appropriately (Mallett, Fukushima, Stoddard-Dare, and Quinn 2012).

Literature Review

Ball and Simpson (1965) collected information on those brought before the juvenile court in a specific year and defined recidivism as, "repeated offenses." Since this early study, the operational definition of recidivism has become more refined. Collecting data from one calendar year is problematic because juveniles brought before the court early in the year have much more opportunity for recidivism, compared to juveniles brought before the court late in the year. The period of time through which offenders are monitored for recidivism is referred to as a risk period. In a meta-analysis on juvenile recidivism, Cottle, Lee, and Heilbrun (2001) reported risk periods ranging from a single month to 16 years among the included studies. More recently, Hargreaves and Francis (2014) examined a much longer risk period of 35 years. Especially when examining juveniles, one year is the most common period of risk (Bontrager-Ryon, Winokur-Early, Hand, and Chapman 2013; Herz, Ryan, and Bilchik 2010; Frola 2009; Parsons-Winokur, Smith, Bontrager, and Blankenship 2008; Niarhos and Routh 1992). As adolescence is a developmental period in which a juvenile may change substantially, one year is sufficiently long without restricting inclusion of older juveniles. Risk and protective factors are used to identify appropriate prevention and intervention strategies and many of them, discussed below, have been identified as significant predictors of juvenile recidivism. This research has developed into a study area known as risk assessment in which screening instruments are developed, validated, and used for case evaluation.

Risk assessment in juvenile justice has advanced substantially in the near century of its development (Andrews, Bonta, and Wormith 2006). These assessments evaluate static risk factors, characteristics that cannot be changed, and dynamic risk factors, characteristics that can be changed. Potentially, static risks can only be prevented while intervention is possible with dynamic risk factors. For example, because delinquent peer association can be manipulated, it is a dynamic risk factor and because an experience in detention cannot be manipulated, it is a static risk factor. Risk assessment instruments have evolved over time, including a wider variety of risk factors with a greater emphasis on research based knowledge. Andrews, Bonta, and Wormith (2006) describe four generations of risk assessment. The first generation relied on professional judgments of a juvenile's risk to reoffend. The second generation utilized data on static risk factors alone, allowing mostly prevention efforts. Relying on more theoretical knowledge, the third generation added dynamic risk factors, making it possible for greater intervention efforts. The fourth generation allows for the monitoring of progress in treatment after various risk factors have been addressed (Andrews, Bonta, and Wormith 2006). Cottle, Lee, and Heilbrun (2001) identified eight domains used for predicting juvenile recidivism, which closely match the 12 risk domains of Montana's Back on Track (BOT). These domains include items that allow for the testing of variables related to: social bond theory, self-control theory, and life-course persistence theory. Beyond the testing of theory, many other factors influencing recidivism can be examined. The BOT risk domains include: criminal history, demographics, education, use of free time, employment, relationships, family, alcohol & drugs, mental health, attitudes & behaviors, aggression, and skills (Assessments.com 2006).

The relationships between social bond theory, self-control theory, and life-course persistence theory are important to note. Age is extremely important to each of these criminological theories. It takes time to develop social bonds and, because juveniles have not had adequate time to develop these bonds, they are less likely to conform to law-abiding behaviors (Hirschi 1969). Self-control will become

an established personality trait in adulthood. Juveniles have not had the complete opportunity to develop this personality trait and may fail to consider the consequences of their actions (Gottfredson and Hirschi 1990). Juveniles involved in delinquency at younger ages than their peers are more likely to be involved in delinquency. As delinquency and subsequent sanctions can interfere with development, these juveniles may not acquire adult responsibilities leading to desistance at the same rate as their peers (Moffitt 1993). The relationships between these theories indicate that, although each is useful, in combination, they may overlap in their ability to explain recidivism.

Detention is placement in a secure facility prior to trial and lasts a short time, usually until the juvenile is released to parents the next day. Detention is an especially important topic because, regardless of declining rates of juvenile crime, this expensive practice is relied on more often than in the past (Holman and Ziedenberg 2006; Shelden 1999). Intended for those who either pose a risk to public safety or are likely to miss their court date, juveniles who do not meet these criteria are also placed in detention as a form of punishment. In some states, like Montana, the initial detention decision is made by a police officer upon arrest (McKay, Hollist, Coolidge, Delano, Greenwood, King, McLean, Burfeind, Harris, and Doyle 2014). Although detention can have a deterrent effect on some juveniles, the majority of those who experience detention are involved in recidivism within one year (Bezruki, Varana, and Hill 1999).

Factors Influencing Recidivism

Risk assessment instruments collect a wide variety of information, allowing risk factors related to recidivism to be examined alongside theoretical variables. Among demographic variables, age and low-income have been identified as a significant predictor of juvenile recidivism. Hirschi and Gottfredson (1983) note that rates of offending peak during adolescence. Younger juveniles are more likely to be involved in recidivism. Juveniles from low-income families are more likely to be involved in delinquency. Barrett and his colleagues (2014) found that indicators of low-income, such as eligibility for free lunch,

significantly predict recidivism. Among court history variables, risk assessment scores, labeling, the extent of delinquency, the seriousness of delinquency, community service, and restitution have been identified as significant predictors of recidivism. Risk assessment score, fulfilling the intended function, is an accurate and significant predictor juvenile recidivism (McKay, Hollist, Bunch, Acton, Tillman, and Harris 2015; Bontrager-Ryon, Winokur-Early, Hand, and Chapman 2013; Frola 2009). Being adjudicated a delinquent youth can have a labeling effect, leading to secondary deviance or recidivism (Farrington 1977). Having multiple charges or multiple counts of a single charge is more extensive and more serious than a singular offense. Those who are initially involved in delinquency at a greater rate are more likely to be involved in recidivism. The extent and seriousness of prior offending have been identified as significant predictors of recidivism (Christiansen and Vincent 2013; Mallett, Fukushima, Stoddard-Dare, and Quinn 2013; Mulder, Brand, Bullens, and van Marle 2011; Frola 2009; Parsons-Winokur, Smith, Bontrager, and Blankenship 2008). Juveniles can be sanctioned with the assignment of community service or restitution payments. Juveniles who fulfill the conditions of these sanctions are less likely to recidivate. Various sanctions and progress with the conditions of those sanctions have been identified as significant predictors of recidivism (Ryan, Abrams, and Huang 2014; Bontrager-Ryon, Winokur-Early, Hand, and Chapman 2013; Mulder, Brand, Bullens, and van Marle 2011; Herz, Ryan, and Bilchik 2010). Among family variables, parental criminality, sibling criminality, and non-intact family have been identified as significant predictors of recidivism. Whether it is due to the modeling of behavior or lack of adequate control of deviance, evidence of parental criminality has been identified as a significant predictor of recidivism (Ryan, Abrams, and Huang 2014). Juveniles often have strong relationships with siblings, modeling their behavior. The presence of delinquent siblings has been identified as a significant predictor of recidivism (Frola 2009). Whether it is a result of a lack of supervision or the reduced income in a single-parent family, a non-intact family has been identified as a significant predictor of recidivism (Christiansen and Vincent 2013).

Among school & peer variables, special education, gang involvement, and delinquent peer association have been identified as significant predictors of recidivism. The bases for a juveniles need for special education may also increase their likelihood of involvement in delinquency. Furthermore, difficulty in school can possibly complicate relationships with peers, leading to frustration. Special education need has been identified as a significant predictor of recidivism (Barrett, Katsiyannis, Zhang, and Zhang 2014; Hong, Ryan, Chiu, and Sabri 2013). Although gang membership is often used as a means to reduce serious violent victimization, gang members are more likely to be involved in delinquency (Taylor, Peterson, Esbensen, and Freng 2007). Gang involvement has been identified as a significant predictor of recidivism (Herz, Ryan, and Bilchik 2010). Group offending is highest in the teenage years (Farrington 1986). When juveniles associate with delinquent peers, they are more likely to be involved in crime. Delinquent peer association has been identified as a significant predictor of recidivism (Mulder, Brand, Bullens, and van Marle 2011; Frola 2009). Among individual variables, substance abuse, maltreatment, victimization, and suicide ideation have been identified as significant predictors of recidivism. When alcohol or drugs interfere with aspects of a juvenile's life, they may compensate with crime or participate in crime in order to gain access to a particular substance. A history of substance abuse has been identified as a significant predictor of recidivism (Benner, Stage, Nelson, Laederich, and Ralston 2010; Herz, Ryan, and Bilchik 2010; Frola 2009). A neglected child has less opportunity to learn self-control, may participate in crime for attention, and is more likely to be involved in recidivism. Physical and sexual abuse can leave lasting impressions on juveniles, whether through the learning of criminal behaviors or through criminal coping, victims of abuse are more likely to be involved in recidivism. Maltreatment and victimization, such as neglect and abuse, have been identified as significant predictors of recidivism (Barrett, Katsiyannis, Zhang, and Zhang 2014; Mulder, Brand, Bullens, and van Marle 2011; Benner, Stage, Nelson, Laederich, and Ralston 2010). Suicide ideation is thought to be related to impulsivity or weak interpersonal relationships; juveniles with thoughts and actions related

to suicide are more likely to be involved in crime. Suicide ideation has been identified as a significant predictor of recidivism (Mallet, Fukushima, Stoddard-Dare, and Quinn 2013; Benner, Stage, Nelson, Laederich, and Ralston 2010).

The Social Bond

Social bond theory was developed by Travis Hirschi in his 1969 book titled, *Causes of Delinquency*. Hirschi's approach to explaining delinquency is in line with an area of theory within criminology, referred to as control theories. Rather than explaining the motivations for crime, assuming criminal motivations are inherent in all of us, control theories seek to explain why people conform to law-abiding behavior (Hirschi 1969). Hirschi (1969) identifies four elements of an individual's social bond: attachment, commitment, involvement, and belief. Attachment concerns an individual's affect toward prosocial others and institutions. For example, a juvenile may conform because they do not want their parents or teachers to be disappointed in them. Attachment to parents has been identified as a significant predictor of recidivism, those with stronger attachments are less likely to recidivate (Mulder, Brand, Bullens, and van Marle 2011; Frola 2009; Costello and Vowell 1999; Hoge, Andrews, and Leschied 1996; Hoge, Andrews, and Leschied 1994; Niarhos and Routh 1992; Power, Ash, Shoenberg, and Sirey 1974; Ganzer and Sarason 1973; Hirschi 1969). Commitment addresses an individual's desire to retain what they have worked for. For example, a juvenile may avoid delinquency because they could lose: their job, their scholarship, their spot on the team, or friends. Commitment to school has been identified as a significant predictor of recidivism, those with greater commitment are less likely to recidivate (Christianson and Vincent 2013; Herz, Ryan, and Bilchik 2010; and Frola 2009; Costello and Vowell 1999; Ilacqua, Coulson, Lombardo, and Nutbrown 1999; Katsiyannis and Archwamety 1997; Duncan, Kennedy, and Patrick 1995; Niarhos and Routh 1992; Kahn and Chambers 1991; Spellacy and Brown 1984; Cymbalisty, Schuck, and Dubeck 1975). Involvement relates to an individual's schedule and the degree to which it is occupied by pro-social activities. For example, a juvenile that goes to a team practice immediately after school and to work immediately after practice is less likely to be delinquent simply

because they do not have the time. Involvement in prosocial leisure activities has been identified as a significant predictor of recidivism, those who are involved in more pro-social leisure are less likely to recidivate (Costello and Vowell 1999; Ilacqua, Coulson, Lombardo, and Nutbrown 1999; Hoge, Andrews, and Leschied 1996; Shields and Whitehall 1994). Belief incorporates pro-social values or opinions against the violation of laws. For example, a juvenile may not take money out of an unattended wallet in the locker room because they believe stealing is never okay. Belief in values that are against the violation of the law has been identified as a significant predictor of juvenile recidivism, those who hold such beliefs are less likely to recidivate (Costello and Vowell 1999; Hirschi 1969). It is expected that, although the elements of the social bond are related, together they will be able to explain differences in crime and delinquency (Hirschi 1969). Hirschi (1969) also assumes, that because they have had less time and experience developing these bonds, juveniles will be involved in crime and recidivism at a greater rate.

Low Self-Control

Michael R. Gottfredson and Travis Hirschi (1990) authored *A General Theory of Crime* in order to try and explain unanswered questions in the field of criminology. Like social bond theory, self-control theory presents a control theory. The reason people are involved in crime or delinquency is because they lack adequate levels of self-control. Self-control is learned in childhood and can be established as a personality trait by adulthood (Gottfredson and Hirschi 1990). Low self-control has six components: impulsivity, risk-seeking, preference for simple tasks, preference for physical activities, self-centeredness, and low tolerance for frustration. These six components combined account for low self-control, a unidimensional trait ranging from high to low (Arneklev, Grasmick, Tittle, and Bursik 1993). Low self-control has not only been linked to crime and related behaviors, but also with low quality of life and negative life outcomes (Evans, Cullen, Burton, Dunaway, and Benson 1997). In a large-scale, cross-cultural study, low self-control was identified as a significant predictor of deviance, explaining 20% of the variation in deviant behaviors, such as crime and recidivism (Vazsonyi, Pickering, Junger, and Helsing 2001). Those who are impulsive, seek risks, prefer simple tasks, prefer physical activities, are self-

centered, or are easily frustrated are more likely to be involved in delinquency. Low self-control has been identified as a significant predictor of recidivism (Barrett, Katsiyannis, Zhang, and Zhang 2014; Hong, Ryan, Chiu, and Sabri 2013; Mallett, Fukushima, Stoddard-Dare, and Quinn 2013; Mulder, Brand, Bullens, and van Marle 2011; Vazsonyi, Pickering, Junger, and Hessing 2001; Entner-Wright, Caspi, Moffitt, and Silva 1999).

Life-Course Persistence

Age has been a topic of much interest in criminology and has played a role in the development of criminological theories, such as those listed above. Although the relationship between age and crime is easily identified across race, gender, class, and location, it is difficult to explain (Hirschi and Gottfredson 1983). Farrington (1986) argues that group offending is highest in the teenage years and the age-crime relationship refers to the prevalence of delinquency rather than the incidence. In other words, the relationship between age and crime is explained by the onset of and desistance from offending between individuals rather than changes within individuals' offending frequencies (Farrington 1986). Although there is variation in the relationship between age and crime when comparing different offenses, offending rises sharply and peaks in the teenage years before declining at a lesser rate (Steffensmeier, Anderson-Allan, Harer, and Streifel 1989). Moffitt (1993) proposed two developmental trajectories, differentiating between adolescent-limited offenders and life-course-persistent offenders. Life-course persistent offenders are believed to be involved in delinquency earlier in life and to persist in offending well into adulthood, possibly even making a career out of crime. Adolescent-limited offenders are believed to be modeling anti-social behavior patterns after life-course persistent offenders only when those behaviors are somehow beneficial, which explains the trend of desistance from anti-social behavior as juveniles gain more responsibilities into adulthood (Moffitt 1993). Those who are involved in delinquency at younger ages than their peers are more likely to be involved in recidivism. Age at first offense has been identified as a significant predictor of recidivism (Bontrager-Ryon, Winokur-Early, Hand, and Chapman 2013; Christiansen and Vincent 2013; Mulder, Brand, Bullens, and van Marle 2013;

Benner, Stage, Nelson, Laederich, and Ralston 2010; Frola 2009; Parsons-Winokur, Smith, Bontrager, and Blankenship 2008).

Current Study

The current research seeks to examine risk factors related to recidivism and to identify the unique effect of an experience in juvenile detention on juvenile recidivism in Montana. In addition, the degree to which the detention effect is influenced by other risk factors will be examined. Consistent with prior research, recidivism will be examined across a one-year (12 months) period of risk (Bontrager-Ryon, Winokur-Early, Hand, and Chapman 2013; Herz, Ryan, and Bilchik 2010; Frola 2009; Parsons-Winokur, Smith, Bontrager, and Blankenship 2008; Niarhos and Routh 1992). This operationalization of recidivism requires at least two years of data, in order to ensure each juvenile an equal temporal opportunity to re-offend. A single year risk period is appropriate when studying juveniles because adolescence is a developmental period in which people can change a great deal in a short time. Two questions are addressed in this analysis. First, does juvenile detention effect juvenile recidivism risk in Montana? Second, does the inclusion of other risk factors influence the effect of juvenile detention on juvenile recidivism? These data, which have been explored very little, allow for a unique examination of first-time offenders in Montana, a state composed mostly of white individuals with Native Americans being the second largest racial group. This study contributes to existing literature on juvenile recidivism while identifying risk factors that are essential to explaining persistence in offending by juveniles in Montana. These identifications will allow researchers and practitioners to develop effective strategies for both prevention and intervention efforts. The following, two hypotheses were investigated:

Hypothesis 1: An experience with juvenile detention will significantly influence juvenile recidivism in Montana.

Hypothesis 2: Including a variety of risk factors will condition the effect an experience with detention will have on juvenile recidivism in Montana.

Methods

The Back on Track Risk-Needs Assessment Instrument

The Washington State Institute for Public Policy, in conjunction with the Washington State Juvenile Court Administrators and Assessments, created the Washington State Juvenile Court Assessment (WSJCA) in 1998. Since then, many states have modified the WSJCA, adapting it for their own use. Vermont, Florida, and Montana use assessments adapted from the WSJCA, one of which is the Back on Track (BOT). The BOT has a pre-screen instrument that includes only the criminal history, social history, and attitudes & behaviors domains, representing about 1/3 of the full assessment (Assessments.com 2006). Probation officers in Montana gather information on their probationers and, using the pre-screen BOT, assign a risk score representing the juveniles' likelihood for a new offense during the period of risk. Although the scores on the pre-screen dictate the level of risk assigned to the juvenile, probation officers have the ability to change the risk designation by overriding the instruments decision. "With the ability to guide intervention strategies," McKay and his colleagues (2015:2) note, "Montana's BOT is a model example of a fourth generation risk assessment instrument, complete with static, dynamic, and protective factors." The BOT has been shown to accurately predict recidivism risk, although this accuracy varies by race, gender, and offense type (McKay, Hollist, Bunch, Acton, Tillman, and Harris 2015).

Sample

The data for this analysis was provided to the Criminology Research Group of the Department of Sociology at the University of Montana by the Office of the Court Administrator for Montana's Supreme Court. The initial sample included 9,077 Montana juveniles. These juveniles were involved in their first delinquent offense between 2008 and 2014. The final sample, used in the analyses that follow, was reduced substantially, based on various eligibility criteria. First, the juvenile must have been assessed with the full BOT. Second, the juvenile must have had the full opportunity for recidivism, provided by the risk period. Third, juveniles involved in recidivism beyond the risk period were removed. These

eligibility requirements ensured that: each juvenile provided a wide variety of information, each juvenile had an equal opportunity to reoffend, and the data was not confounded by those who offended beyond the risk period. The final sample for this analysis includes 840, Montana juveniles.

Measures

Dependent Variable

Recidivism, the single dependent variable, is measured dichotomously. Recidivism is defined as, involvement in at least one status, misdemeanor, or felony offense within the one-year period of risk. Recidivism involvement was coded as 1, while no involvement in recidivism was coded as 0. Status offenses were included in the measure of recidivism because, unlike technical violations, status offenses represent a violation of the law. A total of 33.6% of the sample committed a recidivating offense within the risk period.

Predictor Variables

Demographics

Five, demographic variables are included in the analysis: age, sex, race, household income, and urban district living. Age is a continuous variable, ranging from nine to 18 years of age. Sex is coded as a dichotomous variable with male as the reference category, 0 indicates not male while 1 indicates male. Race is also coded as a dichotomous variable with non-white as the reference category, 0 indicates white while 1 indicates non-white. There were too few juveniles of minority status, who were not Native American, to include all racial categories individually without possibly compromising the identity of juveniles with a rare minority status in Montana. Household income, although it could not be adjusted for family size, is based on a within-sample, \$20,000-\$40,000 average. Below average income, less than \$20,000, is coded as 1, average income is coded as 2, and above average income, more than \$40,000, is coded as 3. Urban district measures whether or not the juvenile lives in a judicial district with an urban county. There are four judicial districts in Montana with urban cores. Those living in a rural district are designated by a 0, while those living in an urban district are designated by a 1. Table 1 below presents descriptive statistics for demographic control variables.

Table 1: Descriptive Statistics for Demographic Variables (n = 840)

	Percentage	Mean	Standard Deviation	Minimum	Maximum
Age	N/A	15.14	1.59	9	18
Male	67.7%	.68	.47	0	1
Non-White	13.6%	.14	.34	0	1
Urban District	37.1%	.37	.48	0	1
Household Income	N/A	1.99	.78	1	3

Court History

Eight, juvenile court history variables are included in the analysis: BOT risk level, disposition, age at first offense, concurrent offenses, counts of presenting offense, community service, restitution, and detention. Risk level is calculated by the pre-screen portion of the Back on Track and ranges from low-risk to high-risk: low-risk=1, medium-risk=2, and high-risk=3. Disposition refers to the court outcome, 1 indicates informal processing (e.g. probation, community service, electronic monitoring, etc.) while 2 indicates the juvenile was formally adjudicated a delinquent youth. Age at first offense is coded as a dummy variable with 14 years of age or younger as the category of interest, 0 indicates older than 14 while 1 indicates 14 years of age or younger. Concurrent offenses, the total number of different offenses charged at initial contact, is coded as a dummy variable with greater than one concurrent offense as the category of interest, 0 indicates no concurrent offenses while 1 indicates at least one concurrent offense. Counts of presenting offense, the total number of the same offense charged at initial contact, is coded as a dummy variable with greater than one count as the category of interest, 0 indicates a single count of the presenting offense while 1 indicates greater than one count of the presenting offense. Community service is a dichotomous variable with assignment of community service as the category of interest, 0 indicates no community service while 1 indicates community service. Restitution is a dichotomous variable with assignment of restitution as the category of interest, 0 indicates no restitution while 1 indicates restitution. Detention is a dichotomous variable with an experience in detention as the category of interest, 0 indicates no experience with detention while 1 indicates at least one experience with detention. Table 2 below presents descriptive statistics for court history variables.

Table 2: Descriptive Statistics for Court History Variables (n = 840)

	Percentage	Mean	Standard Deviation	Minimum	Maximum
Detention	10.2%	.1	.3	0	1
BOT Risk Level	N/A	1.44	.69	1	3
Disposition	16.2%	1.16	.37	1	2
14 or Younger at 1st Off.	45%	.45	.49	0	1
Multiple Concurrent Off.	39.6%	.39	.49	0	1
Multiple Presenting Off.	3.6%	.04	.19	0	1
Community Service	64.5%	.65	.48	0	1
Restitution	68.2%	.68	.47	0	1

Family Factors

Four family variables are included in the analysis: family functioning, parental criminality, sibling criminality, and non-intact family. Family functioning is included as an approximation of the attachment element of the social bond. Consisting of nine items, the responses were summed together ($\alpha=.854$), with higher values indicating healthier family functioning. Parental criminality consists of five items summed together ($\alpha=.732$), with higher values indicating greater parental criminal involvement. Sibling criminality consists of five items summed together ($\alpha=.597$), with higher values indicating greater sibling criminal involvement. Non-intact family is a dichotomous variable with parents separated as the reference category, 0 indicates parents are together while 1 indicates parents are separated. Table 3 below presents descriptive statistics for family variables. See appendix A for items, with response categories, included in each index.

Table 3: Descriptive Statistics for Family Variables (n = 840)

	Percentage	Mean	Standard Deviation	Minimum	Maximum
Family Functioning	N/A	26.42	4.66	1	31
Parental Criminality	N/A	.99	1.36	0	5
Sibling Criminality	N/A	.27	.69	0	5
Non-Intact Family	57.3%	.57	.49	0	1

School & Peer Factors

Five school & peer variables are included in the analysis: commitment, involvement, special education, gang membership, and delinquent peers. Commitment to school is included as an element of the social bond and consists of eight items summed together ($\alpha=.817$). Higher values indicate greater commitment to educational goals. Involvement in school activities or other prosocial leisure is included

as an element of the social bond and consists of eight items summed together ($\alpha=.812$). Higher values indicate greater involvement in pro-social leisure activities. Special education is coded as a dichotomous variable with special education need as the category of interest, 0 indicates no special education need while 1 indicates a special education need. Self-reported gang membership is coded as a dichotomous variable with gang membership being the category of interest, 0 indicates no gang membership while 1 indicates gang membership. Delinquent peers consists of four items summed together ($\alpha=.695$), with higher values indicating greater delinquent peer association. Table 4 below presents descriptive statistics for school & peer variables. See appendix A for items, with response categories, included in each index.

Table 4: Descriptive Statistics for School & Peer Variables (n = 840)

	Percentage	Mean	Standard Deviation	Minimum	Maximum
Commitment	N/A	21.87	4.62	6	30
Special Education	23.5%	.24	.42	0	1
Involvement	N/A	6.01	3.65	1	14
Delinquent Peers	N/A	2.32	1.71	0	7
Gang Membership	1.3%	.013	.11	0	1

Individual Factors

Eight individual variables are included in the analysis: belief, low self-control, drug problems, alcohol problems, physical abuse, sexual abuse, neglect, and suicide ideation. Belief is included as an element of the social bond and consists of nine items summed together ($\alpha=.893$). Higher values indicate greater belief in pro-social values. Low self-control consists of eight items summed together ($\alpha=.741$), with higher values indicating lower self-control. Alcohol problems ($\alpha=.75$) and drug problems ($\alpha=.764$) both consist of five items, higher values indicate greater interference in the juveniles life by either drugs or alcohol. Physical abuse, a history of violent victimization, is coded as a dichotomous variable with physical abuse as the category of interest, 0 indicates no physical abuse while 1 indicates physical abuse. Sexual abuse, a history of sexual victimization, is coded as a dichotomous variable with sexual abuse as the category of interest, 0 indicates no sexual abuse while 1 indicates sexual abuse. Neglect, historically

receiving insufficient care, is coded as a dichotomous variable with neglect as the category of interest, 0 indicates no neglect while 1 indicates neglect. Suicide ideation, including suicidal thoughts, planning, or attempts, is coded as a dichotomous variable with suicide ideation as the category of interest, 0 indicates no suicide ideation while 1 indicates suicide ideation. Table 5 below presents descriptive statistics for individual variables. See appendix A for items, with response categories, included in each index.

Table 5: Descriptive Statistics for Individual Variables (n=840)

	Percentage	Mean	Standard Deviation	Minimum	Maximum
Belief	N/A	26.73	4.92	9	32
Low Self-Control	N/A	12.08	3.84	4	23
Drug Problems	N/A	.51	1.08	0	5
Alcohol Problems	N/A	.19	.69	0	5
Physical Abuse	16.4%	.16	.37	0	1
Sexual Abuse	8.5%	.09	.28	0	1
Neglect	14.8%	.15	.36	0	1
Suicide Ideation	22.1%	.22	.42	0	1

Analysis Strategy

Data

The data were evaluated using frequency distributions, which provided evidence that each variable was measured as outlined above and free of data entry or coding errors. For index variables, alpha reliability was examined and these values are included with the introduction to the variable, above. Although they were explored, less reliable indices were not included in the final model. Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity indicated the sample was suitable for creating index variables. Among the indices included in the final model, K-M-O values ranged from .81 to .875. Among the indices excluded from the final model, K-M-O values ranged from .644 to .917. Although K-M-O values range from zero to one, anything below .5 is considered absolutely unacceptable. In all cases, Bartlett's Test of Sphericity was significant beyond the .001 alpha level, indicating that the inter-correlation matrices were not due to random chance alone. Descriptive statistics, shown in tables one through five, were used to check for missing data and possible coding

errors. Missing data was replaced by mean substitution, a popular method of data estimation. This was determined to be the best possible approach given the circumstances. A total of 17 items had at least some missing data. Household income was missing for nine cases and appeared to be missing at random. Eight family-related items, used in the family functioning index, were missing data for 22 cases. The juveniles represented by these cases are missing information on the family section of the BOT because they reported living alone, with friends, or in a group home and were instructed to skip the family section. Eight school & peer-related items, used in either the commitment or the involvement indices, were missing data for 70 cases. The juveniles represented by these cases were instructed to skip the school section of the BOT because they reported that they were not enrolled in school as they had: been expelled, dropped out, graduated, or acquired a G.E.D. As the exact reason for skipping sections cannot be identified and these reasons are quite variable, mean substitution was used to enable the cases inclusion in the analysis. Although mean substitution reduces the variance within an item and its correlation between other items, it conserves the mean of the distribution. Using this method has the potential to reduce the effect or significance of indices made of items with substituted data. Had the values for items included in indices not been replaced, the values for index variables would have been artificially and substantially deflated for a selection of cases or the sample size would have been reduced by roughly 10%.

Technique

Logistic regression is used as the statistical technique to test the research hypotheses. Logistic regression is similar to ordinary least squares regression but, with fewer assumptions, is more flexible and is appropriate when the outcome variable is dichotomous. Although involvement in recidivism is an all or none designation, many of the variables thought to effect recidivism are measured in a variety of ways. The flexibility of logistic regression allows the use and analysis of both dichotomous and index predictor variables. The characteristics of the data make logistic regression an excellent tool for examining factors that effect juvenile recidivism in the current study.

Process

The analysis will use a series of logistic regression models to examine the influence of categories of the predictor variables on juvenile recidivism, both individually and in combination. Initially, the effect of detention on recidivism is examined. Following this, six logistic regression models are examined, one for each domain of the predictor variables. The final stage in the analysis is the fitting of a full model that includes demographic variables and all of the predictor variables that were found to be significant in the partial models. The predictive ability of variables in each model can be compared allowing for the identification of any changes in effect sizes of significant variables, including detention.

Results

Bivariate correlations are provided in Appendix B. Due to the large number of variables examined, the correlation matrices are arranged by variable category. Among the five demographic variables, three were significantly correlated with recidivism. Age and income are negatively associated with recidivism while urban district is positively associated with recidivism. Among the eight court history variables, two were significantly associated with recidivism, although the association was weak. BOT risk level and 14 or younger at first offense were positively associated with recidivism. Detention has a very weak (.032), negative association with recidivism. Among the four family variables, two were significantly associated with recidivism. Family functioning was negatively associated with recidivism while parental criminality was positively associated with recidivism. Among the five school & peer variables, three were significantly associated with recidivism. Commitment and involvement were negatively associated with recidivism while delinquent peers was positively associated with recidivism. Among the eight individual variables, four were significantly associated with recidivism. Low self-control, physical abuse, and suicide ideation were positively associated with recidivism while belief was negatively associated with recidivism.

Detention, the variable of interest, was initially examined alone. In this single predictor variable, detention accounted for only 1/10th of 1% of the variation in recidivism. Although the results were far

from significant, a 20% reduction in the likelihood of recidivism was found for the juveniles placed in detention. The evidence from the model fails to support hypothesis one. A total of six, binary logistic regression models were tested. One model for each group of independent variables was examined, including: demographics, court history, family, school & peer, and individual. Although all demographic variables were retained, the final model tested only variables shown to be significant predictors of recidivism, at the .05 alpha level, in the partial models. Tables providing a summary for each model are included in Appendix C. Demographic variables alone could explain 4.3% of the variation in recidivism, however age and household income were the only significant variables. Court history variables alone could explain 10.3% of the variation in recidivism, however detention, BOT risk level, and age at first offense were the only significant variables. Family variables alone could explain 3.2% of the variation in recidivism, however family functioning and non-intact family were the only significant variables. Gang membership was not included in the analysis due to a very low number of juveniles reporting gang membership. School & peer variables alone could explain 6.4% of the variation in recidivism, however commitment and involvement were the only significant variables. Individual variables accounted for 8.6% of the variation in recidivism, however low self-control and physical abuse were the only significant variables.

The final model, displayed in table 6 below, explains 15.5% of the variation in recidivism among Montana juveniles. In the final model: detention, age at first offense, and low self-control showed significance at the .01 alpha level, BOT risk level showed significance at the .05 alpha level, and non-intact family and physical abuse approached significance. Juveniles placed in detention were 57% less likely to be involved in recidivism. The evidence from the models provide full support for hypothesis two. In terms of BOT risk level, medium-risk juveniles were 56.9% more likely than low-risk juveniles to be involved in recidivism. Juveniles who were 14 or younger at the time of their first offense were 87.5% more likely to be involved in recidivism. Juveniles from non-intact families were 37.2% more likely to be

involved in recidivism. Juveniles with low self-control were 10% more likely to be involved in recidivism.

Juveniles who were physically abused were 49.6% more likely to be involved in recidivism.

Table 6: Binary Logistic Regression: Full Model (n=840)

	B	S.E.	P-Value	Exp(B)
Age	-.007	.061	.914	.993
Male	.086	.169	.612	1.089
Non-White	-.027	.229	.906	.973
Urban County	.024	.164	.883	1.024
Household Income				
Below Average			.448	
Average	-.050	.187	.79	.952
Above Average	-.259	.215	.229	.772
Detention	-.844	.287	.003	.43
BOT Risk Level				
Low-Risk			.066	
Medium-Risk	.451	.213	.034	1.569
High-Risk	.037	.325	.909	1.038
Age at 1st Offense	.628	.205	.002	1.875
Family Functioning	.032	.022	.139	1.033
Non-Intact Family	.316	.164	.053	1.372
Commitment	-.02	.024	.404	.98
Involvement	-.042	.027	.122	.959
Low Self-Control	.096	.028	.001	1.1
Physical Abuse	.403	.215	.061	1.496

Discussion

The purpose of this investigation was to examine the impact of detention on juvenile recidivism and the degree to which predictor variables from prior literature impact this association. First, detention was examined alone and the findings showed the variable to have an insignificant, negative effect on

recidivism. Contrary to the findings from prior research (Bezruki, Varana, and Hill 1999), the evidence from the analysis did not find a significant effect of detention on recidivism. Second, several logistic regression models pertaining demographics, court history, family, school & peer, and individual factors were examined for variables significantly influencing juvenile recidivism. Finally, a model that included only demographics and significant variables from prior models was examined. In the full model, detention significantly influenced juvenile recidivism. Consistent with prior research, although the effect was in the opposite direction, detention significantly predicted recidivism, (Bezruki, Varana, and Hill 1999). Juveniles who were placed in detention were 57% more likely to be involved in a recidivating offense. Unlike when examined alone, when examined in combination with other risk factors, detention was a significant predictor of recidivism. When examining the influence of variables between individual models and the full model, several changes are noted. The effect and/or significance of many of the demographic variables are moderated. When detention is included in the full model, the negative influence on delinquency of age, race, and high-risk BOT are reduced in magnitude. This suggests that detention effects juvenile recidivism differently for juveniles of different racial background and age. Detention is disproportionately used against minority juveniles in Montana (Hollist, Coolidge, Delano, Greenwood, King, McLean, McKay, Harris, Burfeind, and Doyle 2012). Detention may be more salient to older juvenile offenders, as they are closer to the age of majority. Furthermore, high-risk BOT represented the largest change in effect size when the full model was examined with and without detention. Although the majority of those placed in detention were not high-risk, the largest proportion of juveniles placed in detention were designated high-risk by the BOT, the inclusion of detention appeared to moderate the effect of high-risk BOT.

Several theories were tested in the analysis, including: social bond theory, self-control theory, and life-course persistence theory. Although not supported in the full model, social bond theory was partially supported in individual models. Consistent with prior research, attachment, commitment, and

involvement significantly influenced juvenile recidivism (Mulder, Brand, Bullens, and van Marle 2011; Frola 2009; Costello and Vowell 1999; Hoge, Andrews, and Leschied 1996; Hoge, Andrews, and Leschied 1994; Niarhos and Routh 1992; Power, Ash, Shoenberg, and Sirey 1974; Ganzer and Sarason 1973; Christianson and Vincent 2013; Herz, Ryan, and Bilchik 2010; Ilacqua, Coulson, Lombardo, and Nutbrown 1999; Katsiyannis and Archwamety 1997; Duncan, Kennedy, and Patrick 1995; Kahn and Chambers 1991; Spellacy and Brown 1984; Cymbalisty, Schuck, and Dubeck 1975; Costello and Vowell 1999; Shields and Whitehall 1994). It is possible that, because they are both control theories, social bond competed with low self-control, causing elements of the social bond to be non-significant in the full model. Self-control theory was supported in both the individual and the full model. Consistent with prior research, those with lower levels of self-control were more likely to be involved in recidivism (Barrett, Katsiyannis, Zhang, and Zhang 2014; Hong, Ryan, Chiu, and Sabri 2013; Mallett, Fukushima, Stoddard-Dare, and Quinn 2013; Mulder, Brand, Bullens, and van Marle 2011; Vazsonyi, Pickering, Junger, and Hessing 2001; Entner-Wright, Caspi, Moffitt, and Silva 1999). It is possible that, because they are both control theories, low self-control and the social bond competed, reducing the apparent effect of low self-control. If variables are available for the testing of both control theories tested in this analysis, low self-control may be a more useful measure. Life-course persistence was supported in both the individual and the full model. Consistent with prior research, those who are involved in offending at younger ages are more likely to be involved in recidivism (Bontrager-Ryon, Winokur-Early, Hand, and Chapman 2013; Christiansen and Vincent 2013; Mulder, Brand, Bullens, and van Marle 2013; Benner, Stage, Nelson, Laederich, and Ralston 2010; Frola 2009; Parsons-Winokur, Smith, Bontrager, and Blankenship 2008). It is possible that a lack of self-control leads to an early onset of offending and an increased likelihood of detection. The ability of self-control to predict recidivism may have been reduced by including age at first offense in the analysis.

Consistent with prior research, risk assessment scores are significant predictors of recidivism (Bontrager-Ryon, Winokur-Early, Hand, and Chapman 2013; Frola 2009). The reasons for the increased likelihood of recidivism among those designated medium-risk are unclear. Are low-risk youth under less supervision and can simply avoid detection? Are high-risk youth deterred by potential consequences of failing to abide by court conditions? Are medium-risk youth in a position where they think they can get away with offending while they actually will not? As both physical abuse and non-intact family approached significance at the .05 alpha level, these variables remain important when considering crime and antisocial behavior among juveniles.

It is interesting to note, that in this sample of first-time offenders, juvenile detention has a specific deterrent effect. This is opposite the effect detention has on recidivism identified in prior literature (Bezruki, Varana, and Hill 1999), and contrary to warnings against the use of detention (Holman and Ziedenberg 2006; Sheldon 1999). It is possible that juveniles placed in detention upon their first offense are effected more by their experience because they are not familiar with aspects of the juvenile justice process. Juveniles who have been through multiple proceedings may see detention as insignificant because of its short duration.

Limitations

Consistent with prior literature, the current study has identified several risk factors related to juvenile recidivism risk, including pre-adjudication detention experiences. However, many limitations require discussion.

First, the sample is limited in scope. The data used for the study include only first-time juvenile offenders and measures recidivism dichotomously. First-time offenders may be removed from the time in their life when their frequency of offending is greatest and it may not be optimal to predict recidivism at this point. Furthermore, the dichotomous measure of recidivism limits our knowledge of the extent to which juveniles were involved in recidivism. It is possible that certain risk factors may have been significant if the total number of recidivating offenses in the risk-period were examined. Furthermore, it

is unclear why these 840 juveniles received the full BOT and the others did not. Is there a difference between those who are not screened, those who are given the pre-screen, and those who are given the full assessment?

Second, the BOT is limited in use and scope. Across Montana's 56 counties, the BOT is used quite variably. Some counties administer the BOT to every juvenile every time it is necessary while other counties rarely administer the BOT. It is possible that, because some counties commit to the use of the BOT, those counties and the experiences of juveniles from those counties are overrepresented in this analysis. Juveniles placed in detention but not given the full assessment were excluded from analysis. This is problematic because the characteristics of the location where the juvenile was detained may influence the use of both detention and the Back on Track. Although variation across districts with and without urban cores was examined, variation across counties and communities within those districts could not be addressed. The BOT is structured in a way that certain responses lead to data loss. For example, if a juvenile is not enrolled in school, they are instructed to skip the section on school. This resulted in 70 cases for which school related variable values were replaced by mean substitution. Although mean substitution is the most conservative way to deal with missing data, averages on those variables may not have been representative of the 70 juveniles who, for one reason or another, were not enrolled in school. Mean substitution also, because the within item variance is reduced, has the potential to reduce the effect of the variable especially for an index created from multiple items with substituted data. These data have not been explored for the creation of indices. Many of the items used, either individually or for an index, are not the same as many that have been used in theory and research. This being the case, the indices and items used approximate their intended measure. Furthermore, some of the response categories are structured in a way that limits analysis of the data. Some questions include interval-level responses however, many questions have unequal response

intervals. For example, Age at first offense is originally coded as 1=younger than 13, 2=13-14, 3=15, 4=16, and 5=17 or older.

Third, Montana is a very homogenous state. With only four metropolitan areas across one of the largest states by geographic area, the state is mainly rural. Given the low population density, it is possible that many detention decisions are based on availability of space and funding. Furthermore, even with the disproportionate minority contact of Native Americans, the minority proportion of the sample is very small. From this data, only conclusions regarding white and Native American juveniles are possible although, the Native American proportion of the sample is small.

Future Research

Regardless of limitations, data collected through the BOT are quite valuable. As this data continues to grow in both size and detail, it should be used to further explore juvenile delinquency and recidivism. Future research should include a wider variety of juvenile offenders in Montana. Expanding the scope to include, not only first-time offenders, but also juvenile offenders who have been in and out of the juvenile justice system may lead to the identification of other, important risk factors. When measuring recidivism, the frequency of recidivism should be examined. This will allow for the identification of risk factors that are most important in terms of intervention efforts. The identification of risk factors relevant to those who offend multiple times within the one-year period of risk may be useful when concerning prevention. It is quite possible that certain risk factors better predict recidivism when the risk period varies. The same risk factors should be examined across a six-month risk period and an 18-month risk period. Knowledge from these studies could inform practitioners' intervention strategies when working with juveniles by identifying which risks are most important under given circumstances.

Beyond changing the scope of the analysis, future research should evaluate this data using different statistical techniques. As it mimics the conditions of a controlled experiment, propensity score matching should be used to identify the unique effect detention has on juvenile recidivism. The same

study should be done, investigating the effects of placement in secure confinement. Although Montana places a very small number of juveniles in secure confinement, propensity score matching, with many-to-one matching, would allow the analysis. From this point, depending on the evidence, results can be compared with other national studies that highlight the possible benefits or dangers of detention and secure confinement. These comparisons may allow the identification of unique aspects of the use of incapacitation practices for juveniles in Montana.

The reasons that an experience in detention reduces juvenile recidivism risk are still unknown. Although, as a single risk factor, detention had no significant effect on juvenile recidivism, the effect of detention was conditioned by the inclusion of other risk and protective factors. Further investigation should be used to identify interaction effects between variables. It is possible that this information can be used for the tailoring of intervention strategies specific to individuals, based on their characteristics and the ways those characteristics influence the efficacy of treatment strategies.

Conclusion

The research presented in this thesis identifies detention as a significant predictor of juvenile recidivism. However, the effect of detention was significant only when conditioned by a variety of other risk factors. Significant risk factors relevant to juvenile recidivism, other than detention, include: low self-control, age at first offense, and medium BOT risk level. Physical abuse and non-intact family approached significance. Although social bond theory was not supported, self-control theory, and life-course persistent theory were supported. As low self-control can become an established trait of personality early in life, it makes sense that age at first offense would be significant in combination with low self-control. The elevation in recidivism risk was much higher for age at first offense than for low self-control. These variables are static risk factors, which highlights the importance of early prevention efforts in juvenile justice. As static risk factors cannot be changed, prevention efforts should target juveniles with poor consequential thinking skills while attempting to increase the age at which juveniles

are first involved in crime. Furthermore, variables related to family, such as a history of physical abuse and non-intact family indicate the need for parental involvement in delinquency prevention efforts. Although other research cautions the use of detention, the results of this research may be used to advocate the use of detention. However, the data used in this study represents first-time offenders in Montana and without the conditioning effect of other variables, detention would have been non-significant. The conditioning effect of the variate on detention highlights the importance of risk assessment and the tailoring of strategies to reduce criminal propensities in juveniles based on their needs. It is clear that detention alone cannot deter juvenile recidivism, however, detention is quite effective when used on first-time offenders with certain characteristics.

Appendix A: Indices

Among the items listed below, if response categories and codes are not provided, the item is a dichotomous variable: no=0 and yes=1.

Family Functioning

Extended family and/or family friends can provide additional support to the family.

- 1-No Support
- 2-Some Support
- 3-Strong Support

Family willingness to help support the youth.

- 1-Hostile, berating, and belittling the youth
- 2-Little to no willingness to support
- 3-Inconsistently willing to support
- 4-Consistently willing to support the youth

Family provides opportunity for youth participation in family activities and decisions affecting the youth.

- 0-No Opportunity
- 1-Some Opportunity
- 2-Opportunities Provided

Level of conflict between: parents, youth and parents, and siblings.

- 1-Domestic Violence
- 2-Threats of Physical Abuse
- 3-Verbal Intimidation
- 4-Some Conflict

Level of parental supervision.

- 1-Inadequate Supervision
- 2-Sporadic Supervision
- 3-Consistent Supervision

Parents' authority over the youth.

- 1-Youth consistently disobeys and/or is hostile
- 2-Youth sometimes obeys some rules
- 3-Youth usually obeys and follows rules

Consistent, appropriate punishment for bad behavior.

- 1-Inconsistent or erratic punishment
- 2-Insufficient punishment
- 3-Overly severe punishment
- 4-Appropriate punishment

Consistent, appropriate rewards for good behavior.

- 1-Inconsistent or erratic rewards
- 2-Insufficient rewards
- 3-Overly indulgent
- 4-Appropriate rewards

Parental characterization of youth's anti-social behavior.

- 1-Proud of youths anti-social behavior
- 2-Accepts anti-social behavior as okay
- 3-Minimizes, justifies, and/or excuses anti-social behavior
- 4-Disapproves of youth's anti-social behavior

Parental Criminality

History of parental drug problems.

History of parental alcohol problems.

Other problem history of parents.

History of father being placed in jail for a period greater than three months.

History of mother being placed in jail for a period greater than three months.

Sibling Criminality

History of older sibling being placed in jail for a period greater than three months.

Sibling alcohol problems.

Sibling drug problems.

Sibling mental health problems.

Sibling employment problems.

Commitment

Youth's conduct in the most recent term.

1-Calls made to the police

2-Calls made to parents

3-Reports made by teachers

4-No conduct problems

5-Recognition for good behavior

Youth's attendance in the most recent term.

1-Truancy

2-Some full days, unexcused

3-Some partial days, unexcused

4-No unexcused absences

5-Good attendance with few absences

Youth's performance (GPA) in the most recent term.

1-Below 1, some D's mostly F's

2-Between 1 and 2, mostly C's and D's but some F's

3-Between 2 and 3, mostly B's and C's with no F's

4-Above 3, mostly A's and B's

5-Honor student, mostly A's

Does the youth set goals?

1-Youth doesn't set goals

2-Youth sets unrealistic goals

3-Youth sets slightly unrealistic goals

4-Youth sets realistic goals

Interviewer's assessment of the likelihood the youth will stay in school and graduate.

1-Not very likely to graduate

2-Uncertain whether or not the youth will graduate

3-Very likely to graduate

Youth believes the school provides an encouraging environment.

0-Youth doesn't believe school is encouraging

1-Youth believes school is somewhat encouraging

- 2-Youth believes school is encouraging
- Youth believes there is value in getting an education.
 - 0-Youth doesn't believe getting an education is valuable
 - 1-Youth believes getting an education is somewhat valuable
 - 2-Youth believes getting an education is valuable
- Is the youth optimistic about the future?
 - 1-Youth believes that nothing matters
 - 2-Youth has low aspirations
 - 3-Youth has normal aspirations
 - 4-Youth has high aspirations

Involvement

- Youth participates in a hobby group or club.
- Youth participates in athletics.
- Youth participates in a religious group.
- Youth participates in a volunteer organization.
- Youth is involved in structured recreational activities.
- Current interest and involvement in structured recreational activities.
 - 0-No
 - 1-Interested but not involved
 - 2-Involved in one activity
 - 3-Involved in two or more activities
- History of structured recreational activities.
 - 0-Never involved
 - 1-Involved in one activity
 - 2-Involved in two or more activities
- Youth's involvement in school activities during the most recent term.
 - 0-Youth is not interested in school activities
 - 1-Interested, but not involved
 - 2-Involved in one activity
 - 3- Youth is involved in two or more school activities

Delinquent Peers

- Youth currently resists anti-social peer influences.
 - 0-Youth does not associate with anti-social peers
 - 1-Usually resistant to anti-social peers
 - 2-Rarely resistant, goes along with anti-social peers
 - 3-Leads anti-social peers
- Youth currently admires and/or emulates anti-social peers.
 - 0-Youth does not admire anti-social peers
 - 1-Somewhat admires and/or emulates anti-social peers
 - 2-Youth admires and/or emulates anti-social peers
- Youth is currently in a romantic, intimate, or sexual relationship.
 - 0-Not in a relationship or in a relationship with a pro-social partner
 - 1-In a relationship with anti-social or criminal partner
- Youth currently has anti-social friends.

Belief

Attitude towards responsible, law-abiding behavior.

- 1-Youth resents or is hostile towards responsible behavior
- 2-Youth does not believe conventional values apply to him/her
- 3-Youth believes conventional values only apply to him/her sometimes
- 4-Youth abides by conventional values

Belief in yelling and verbal aggression to resolve a disagreement.

- 1-Youth believes yelling is often appropriate
- 2-Youth believes yelling is sometimes appropriate
- 3-Youth believes yelling is rarely appropriate

Belief in fighting and physical aggression to resolve a disagreement.

- 1-Youth believes fighting is often appropriate
- 2-Youth believes fighting is sometimes appropriate
- 3-Youth believes fighting is rarely appropriate
- 4-Youth believes fighting is never appropriate

Youth's belief in successfully meeting court conditions.

- 1-Youth does not believe he/she will be successful
- 2-Youth is unsure he/she will be successful
- 3-Youth believes he/she will be successful

Respect for authority figures.

- 1-Youth defies or is hostile towards most authority figures
- 2-Youth resents most authority
- 3-Youth does not respect authority figures
- 4-Youth respects most authority

Respect for the property of others.

- 1-Youth has no respect for property
- 2-Youth has conditional respect for property
- 3-Youth respects personal property but not public property
- 4-Youth respects the property of others

Empathy, remorse, sympathy, or feelings for the victims of criminal behavior.

- 1-Youth does not have empathy for victims
- 2-Youth has some empathy for victims
- 3-Youth has empathy for victims

Belief in control over anti-social behavior

- 1-Youth believes anti-social behavior is beyond his/her control
- 2-Youth believes he/she has some control over anti-social behavior
- 3-Youth believes he/she can avoid or stop anti-social behavior

Youth accepts responsibility for their anti-social behavior.

- 1-Youth is proud of their anti-social behavior
- 2-Youth accepts their anti-social behavior
- 3-Youth minimizes, denies, justifies, excuses, and/or blames others
- 4-Youth accepts responsibility for their anti-social behavior

Low Self-Control

Control over aggression.

- 0-Youth's never had a problem with aggression

- 1-Youth often uses alternatives to aggression
- 2-Youth sometimes uses alternatives to aggression
- 3-Youth rarely uses alternatives to aggression
- 4-Youth lacks alternatives to aggression

Control over impulsivity.

- 0-Youth has never had a problem with impulses
- 1-Youth uses techniques to control impulses
- 2-Youth knows techniques to control impulses
- 3-Youth does not know techniques to control impulses

Consequential thinking.

- 1-Youth acts to obtain desired consequences
- 2-Youth identifies consequences of his/her actions
- 3-Youth understands that his/her actions have consequences
- 4-Youth does not understand there are consequences to actions

Youth has used or threatened someone with a weapon.

Youth has violent outbursts, temper displays, or uncontrolled anger indicating potential for harm.

Youth's tolerance for frustration.

- 1-Youth rarely gets upset over small things
- 2-Youth is sometimes upset over small things
- 3-Youth is often upset over small things

Impulsive; Youth acts before thinking.

- 1-Youth uses self-control
- 2-Youth uses some self-control
- 3-Youth is impulsive
- 4-Youth is highly impulsive

Primary emotions when committing the most recent crimes.

- 1-Nervous, afraid, or worried
- 2-Unconcerned or indifferent
- 3-Hyper, excited, or stimulated
- 4-Confident or bragging about not being caught

Alcohol Problems

Currently alcohol disrupts education.

Currently alcohol causes family conflict.

Currently alcohol interferes with keeping pro-social friends.

Currently alcohol causes health problems.

Currently alcohol contributes to criminal behavior.

Drug Problems

Currently drugs disrupt education.

Currently drugs cause family conflict.

Currently drugs interfere with keeping pro-social friends.

Currently drugs cause health problems.

Currently drugs contribute to criminal behavior.

Appendix B: Bivariate Correlation Matrices

Demographics

Table 7: Bivariate Correlations for Demographic Variables (n=840)

		1	2	3	4	5	6
Age	(1)	1					
Male	(2)	.027	1				
Non-White	(3)	-.049	-.054	1			
Urban County	(4)	-.05	-.012	.005	1		
Household Income	(5)	.15**	.042	-.167**	-.01	1	
Recidivism	(6)	-.143**	.011	.013	.069*	-.102**	1

Court History

Table 8: Bivariate Correlations for Court History Variables (n=840)

		1	2	3	4	5	6	7	8	9
BOT Risk Level	(1)	1								
Disposition	(2)	.297**	1							
Age at 1st Off.	(3)	.35**	.109**	1						
Concurrent Off.	(4)	.099**	.172**	-.024	1					
Counts of Off.	(5)	.110*	.229**	.058	.237**	1				
Comm. Service	(6)	-.216**	-.214**	-.035	-.05	-.045	1			
Restitution	(7)	-.254**	-.089*	-.148**	.078*	.007	.397**	1		
Detention	(8)	.373**	.203**	.105**	.104**	.083*	-.103**	-.107**	1	
Recidivism	(9)	.164**	-.011	.208**	-.009	.026	.005	-.045	-.032	1

Family

Table 9: Bivariate Correlations for Family Variables (n=840)

		1	2	3	4	5
Family Function	(1)	1				
Parental Criminality	(2)	-.327**	1			
Sibling Criminality	(3)	-.246**	.292**	1		
Non-Intact Family	(4)	-.041	.093**	-.01	1	
Recidivism	(5)	-.122**	.094**	.045	.064	1

School & Peer

Table 10: Bivariate Correlations for School & Peer Variables (n=840)

	1	2	3	4	5	6
Commitment (1)	1					
Special Education (2)	-.195**	1				
Involvement (3)	.562**	-.16**	1			
Delinquent Peers (4)	-.532**	.076*	-.331**	1		
Gang Member (5)	-.192**	-.039	-.049	.101**	1	
Recidivism (6)	-.205**	.047	-.17**	.125**	.007	1

Individual

Table 11: Bivariate Correlations for Individual Variables (n=840)

	1	2	3	4	5	6	7	8	9
Belief (1)	1								
Low Self-Control (2)	-.778**	1							
Drug Problems (3)	-.243**	.211**	1						
Alcohol Problems (4)	-.16**	.169**	.375**	1					
Physical Abuse (5)	-.216**	.224**	.036	.078*	1				
Sexual Abuse (6)	-.099**	.122**	.034	.037	.223**	1			
Neglect (7)	-.248**	.203**	.088*	.075*	.359**	.163**	1		
Suicide Ideation (8)	-.248**	.296**	.205**	.167**	.22**	.281**	.134**	1	
Recidivism (9)	-.217**	.234**	.045	.025	.12**	.02	.045	.082*	1

Appendix C: Binary Logistic Regression Models

Demographics

Table 12: Binary Logistic Regression: Demographics (n=840)

	B	S.E.	P-Value	Exp(B)
Age	-.169	.046	.000	.845
Male	.088	.16	.58	1.092
Non-White	-.043	.218	.843	.958
Urban County	.284	.153	.062	1.329
Household Income				
Below Average			.048	
Average	-.131	.176	.455	.877
Above Average	-.473	.196	.016	.623

Court History

Table 13: Binary Logistic Regression: Court History (n=840)

	B	S.E.	P-Value	Exp(B)
Detention	-.611	.279	.029	.543
BOT Risk Level				
Low-Risk			.000	
Medium-Risk	.922	.191	.000	2.515
High-Risk	.668	.278	.016	1.951
Disposition	-.362	.229	.114	.696
Age at 1st Offense	.727	.161	.000	2.069
Multiple Concurrent Off.	-.025	.164	.877	.975
Multiple Presenting Off.	0.205	0.419	0.624	1.228
Community Service	0.134	0.179	0.454	1.143
Restitution	-.052	0.182	0.776	0.949

Family

Table 14: Binary Logistic Regression: Family (n=840)

	B	S.E.	P-Value	Exp(B)
Family Functioning	-.045	.017	.007	.956
Non-Intact Family	.316	.151	.036	1.372
Parental Criminality	.081	.058	.158	1.085
Sibling Criminality	.015	.11	.891	1.015

School & Peer

Table 15: Binary Logistic Regression: School & Peer (n=840)

	B	S.E.	P-Value	Exp(B)
Commitment	-.068	.022	.002	.935
Involvement	-.051	.025	.044	.951
Delinquent Peers	.025	.051	.623	1.025
Special Education	.026	.176	.884	1.026

Individual

Table 16: Binary Logistic Regression: Individual (n=840)

	B	S.E.	P-Value	Exp(B)
Belief	-.036	.024	.139	.965
Low Self-Control	.092	.032	.004	1.096
Physical Abuse	.462	.216	.033	1.587
Sexual Abuse	-.17	.282	.546	.844
Neglect	-.199	.228	.383	.820
Suicide Ideation	.051	.195	.796	1.052
Drug Problems	-.006	.076	.938	.994
Alcohol Problems	-.064	.118	.59	.938

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