



---

Assessing the Risk of Sexual and Violent Recidivism  
and Identifying Differences in Risk Factors:  
Comparing Probation Supervised and Released  
Imprisoned Sex Offenders

Assessing the Risk of Sexual and Violent Recidivism and Identifying Differences in Risk Factors:

Comparing Probation Supervised and Released Imprisoned Sex Offenders

Loretta J. Stalans, Ph.D.  
Loyola University Chicago  
Professor of Criminal Justice and Psychology  
Co-Principal Investigator

David Olson, Ph.D.  
Loyola University Chicago  
Chair and Associate Professor of Criminal Justice  
Co-Principal Investigator

November 2010

*This project was supported by Grant No. 04-DB-BX-0043 awarded to the Illinois Criminal Justice Information Authority, Office of Justice Programs, U.S. Department of Justice. Points of view or opinions obtained in this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice or the Illinois Criminal Justice Information Authority. Address correspondence to Dr. Loretta Stalans, Professor of Criminal Justice and Psychology, Loyola University Chicago, 820 N. Michigan Avenue, Chicago, IL 60611; email: lstalan@luc.edu.*

## Table of Contents

I. Chapter 1: Introduction	1
A. Objective of Proposed Research	1
B. Review of Literature	2
C. Prior Risk Assessment Tools	5
D. Risk Factors across Sub-Types of Sex Offenders	10
E. Applying Deterrence Theory	13
II. Chapter 2: Methodology and Design	19
A. Research Design and Sampling	19
B. Sampling of Sex Offenders Released from Prison	26
C. Coding of Data	28
D. Statistical Analysis	30
III. Chapter 3: Predicting Sexual Recidivism During and After Released From Supervision	34
A. Univariate Analyses of Predictors of Sexual Recidivism	36
B. Classification Tree Analysis for Probation Sample	39
C. Univariate ODA Analyses for the Prison Sample	47
D. CTA Models Predicting Sexual Recidivism by Sex Offenders Released	50

from Prison	
E. Conclusions	55
IV. Chapter 4: Predicting Violent Recidivism of Sex Offenders	58
A. Univariate Analyses of Predictors of Violent Recidivism	64
B. CTA Model Predicting Violent Recidivism for the Probation Sample	68
C. CTA Model Predicting Violent Recidivism for the Prison Sample	69
D. Conclusions	72
V. Chapter 5: Comparison of Probation and Prison Samples on Risk Factors and Recidivism Rates	74
VI. Chapter 6: Comparing Sex Offenders Who Are Non-Violent, Other Violent, and Domestic Batterers on Risk Factors for Sex Recidivism	92
A. Risk Factors across Sub-Types of Sex Offenders	94
B. Examining the Ignored Sub-Group of Sex Offenders: Domestic Batterers	99
C. Research Methods for Total Sample of Probationer Sex Offenders	102
D. Research Design and Sampling	
E. Characteristics of the Final Sample of 846 Sex Offenders on Probation	104
F. Results	107
G. Conclusions	125

### **List of Figures**

Figure 3.1.CTA Model Predicting Sexual Recidivism while on Probation	47
Figure 3.2.CTA Model Predicting Sexual Recidivism After Released From Probation	50
Figure 3.3. CTA Model Predicting Serious Sexual Recidivism After Released from Supervision for Probation Data	52
Figure 3.4. Model Predicting Sexual Recidivism While on Parole Supervision	58
Figure 3.5. Model Predicting Sexual Recidivism After Released from Parole	60
Figure 3.6.Model Predicting Serious Sexual Recidivism After Released from Parole	62
Figure 4.1. CTA Model Predicting Violent Recidivism While on Probation Supervision	72
Figure 4.2.CTA Model Predicting Violent Recidivism after Released from Probation	74
Figure 4.3.CTA Model Predicting Violent Recidivism while on Parole Supervision	76
Figure 4.4.Predicting Violent Recidivism After Released from Parole Supervision	80

### **List of Tables**

Table 1.1.Criminal History and Offense Predictors of Sexual and Violent Recidivism	29
Table 1.2.Mental Health, Substance Use, Sexual Deviancy, and Treatment Predictors of Sexual and Violent Recidivism	31
Table 3.1 Significant and Generalizable Predictors of Sexual Recidivism During	44

and After Released From Probation Supervision	
Table 3.2.Mental Health and Sexual Deviancy Attributes Predicting Sexual Recidivism During and After Probation Supervision	45
Table 3.3.Predictors of Sexual Recidivism of the Prison Sample	56
Table 4.1:Predictors of Violent Recidivism During and After Released from Probation	66
Table 4.2:Predictors of Violent Recidivism After Released from Probation Supervision	68
Table 4.3:Predictors of Violent Recidivism During Parole Supervision and After Released from Parole Supervision	70
Table 5.1: Comparison of Demographic and Socio-Economic Among Probation and Prison Sex Offender Samples	81
Table 5.2: How Sex Offenders Sentenced to Probation and those Sentenced to Prison Differ on the Characteristics of the Sex Crimes	84
Table 5.3: Criminal History of the Probation and Prison Sex Offender Samples	86
Table 5.4: Comparing Recidivism Measures of Probation and Prison Sex Offenders	88
Table 5.5: Comparing Risk Assessment Scores of the Probation and Prison Sample	90
Table 6.1: Comparing Sex Offenders Who are Non-violent, Other Violent or Domestic Batterers on Their Current Sex Crime	109
Table 6.2: Comparison of the Three Types of Offenders on Criminal History	111

Table 6.3: Mental Health, Treatment, and Substance Abuse	113
Table 6.4: Recidivism Measures: A comparison across type of sex offender	114
Table 6.5: Standardized Risk Assessment Scales	117
Table 6.6: Comparing Three Types of Offenders: Significant and Generalizable Predictors of Sexual Recidivism While on Probation	119
Table 6.7: Risk Assessment Scales and Sexual Recidivism While on Probation: Comparing Three Types of Sex Offender	120
Table 6.8: Comparison of Offender Types on Predictors of Serious Sexual Recidivism	122
Table 6.9: Comparing Non-violent, Other Violent, and Domestic Batterer Sex Offenders on Any Sexual Recidivism After Release from Probation	123
Table 6.10: Unique Significant and Generalizable Predictors of Any Sexual Recidivism After Released from Probation for Non-Violent Sex Offenders	125
Table 6.11: Prediction of Any Sexual Recidivism After Released from Probation: Use of Standardized Risk Assessment Scales	126
Table 6.12: Performance of Risk Assessment Scales on Predicting Serious Sexual Recidivism After Released from Probation: Comparing Three Types of Offenders	128
Table 6.13: Logistic Regressions Predicting Sexual Recidivism After Released From Probation	129

## Executive Summary

The management of sex offenders' risk of committing sex crimes is of paramount importance to the criminal justice system. Criminal justice and treatment professionals assess risk of sexual recidivism using validated risk assessment tools such as the Rapid Risk Assessment for Sex Offender Recidivism (RRASOR), the Structured Anchored Clinical Judgment- Minimum Version (SACJ-min), the STATIC-99, and the STATIC-2002. However, these scales were created using data primarily from sex offenders released from prison or institutions for dangerous sexual predators. Moreover, although these scales are more accurate than clinical or professional judgment, their accuracy still is only modest and needs improvement. The aim of this research was to identify risk factors and how to combine risk factors to improve standardized risk assessment tools. The driving assumption of the current work was that sex offenders sentenced to probation and sex offenders released from prison are very different on important criminal history, offense, mental health, and social characteristics related to risk of sexual recidivism. Therefore if these two populations are different the current assessment scales used may not be appropriate for probation populations or may not predict well certain subgroups of sex offenders such as sex offenders who also commit domestic violence against adult intimate partners. Moreover, prior research has never considered how supervision may modify the behavior of sex offenders and change the risk factors that predict sexual recidivism. Are the risk factors for sexual recidivism the same if sex offenders are under probation or parole supervision or are free in the community without any supervision?

### ***Research Design.***

The study used previously collected data from evaluations of specialized sex offender probation programs in four counties (N = 846), and also collected new data from sex offenders released from prison (N = 358). The follow-up period was an average of 10 years, with three years



under probation or parole supervision and an average of seven years after release from probation and parole supervision. Both samples of sex offenders were selected from four counties as an attempt to control the effects of law enforcement efforts on the detection of sexual and violent recidivism. Both samples consisted of all male sex offenders who were sentenced for aggravated criminal sexual assault, criminal sexual assault, aggravated criminal sexual abuse, or pornography. Additional details about the sample can be found within the larger report. The main outcome measure is sexual recidivism and violent recidivism during this time period, which is defined as any new arrest for a sex crime or a violent crime.

### *Coding of Data*

All coded information came from probation department case files or prison case files, except the criminal history data, which was coded from criminal history records or “rap sheets” obtained from the Illinois State Police via the Illinois Criminal Justice Information Authority and from the Federal Bureau of Investigation when FBI numbers were available. Four research assistants were trained and supervised to code data from the files. Initial checks on the reliability of the coding indicated that all research assistants were reliably coding the data. The coding did not require judgment calls, but rather transferring information in the file to the code sheets. In addition to collecting data on specific criminal history, offense, social, substance use, and mental health factors, data from probation files and criminal history rap sheets were used to score each sex offenders on the Rapid Risk Assessment for Sex Offender Recidivism (RRASOR), the Structured Anchored Clinical Judgment- Minimum Version (SACJ-min), the STATIC-99, and the STATIC-2002. A brief description of each scale is provided.

*Rapid Risk Assessment for Sex Offender Recidivism (RRASOR).* Hanson (1997) developed the RRASOR based on a meta-analysis of prior research. He selected the risk factors that were most strongly and significantly related to sexual recidivism across the studies. The Rapid Risk Assessment for Sex Offender Recidivism (RRASOR) is the most popular risk assessment tool in the United States and Canada. The RRASOR

considers: male victim, unrelated victim, prior sex offenses, and being released from prison (or an inpatient secured institution) before the age of 25. Prior sexual history is given greater weight with one point assigned for one prior conviction or two prior arrests; two points assigned for three prior convictions or three to five prior arrests, and three points assigned for four or more prior convictions or six or more prior arrests. One clear shortcoming of the RRASOR is that it relies on only official criminal history and ignores prior but undetected crimes that are disclosed to probation officers or treatment evaluators. Based on the RRASOR, 22% scored 0, 34.5% scored 1, 33.4% scored 2, 8.7% scored 3, and 1.5% scored 4 or 5.

Structured Anchored Clinical Judgment—Minimum Version (SACJ-MIN). The SACJ-MIN has a two-step scoring system. In the first step, five characteristics are scored: any current sexual offense, any prior sexual offense, any current nonsexual violent offense, any prior nonsexual violent offense, and four or more sentencing occasions. If offenders have four or more of these five factors, they are considered high risk. In the second step of the SACJ-MIN, an offender's initial risk assessment is moved one category if he has two or more of the following eight characteristics: any stranger victims, any male victims, never married, convictions for hands-off sex offenses, substance abuse, placement in residential care as a child, deviant sexual arousal, and psychopathy (Hanson & Thorton, 2000). Based on the SACJ-min, 26.0% were low risk, 49.8% were medium risk, and 24.2% were high risk.

STATIC-99. The Static-99 is a combined scale of the RRASOR and the SACJ-MIN, and has better predictive accuracy than the RRASOR or the SACJ-MIN. Prior sexual history is scored the same way as in the RRASOR. Each of the following nine risk factors adds one point to the total score: (1) four or more prior sentencing dates; (2) any convictions for non-contact sex offenses; (3) current index nonsexual violent offense; (4) prior nonsexual violence arrests; (5) any unrelated victims; (6) any stranger victims; (7) any male victims; (8) being between the age of 18 to

24 at the time of arrest; and (9) never lived with lover for at least two years. Scores can range from 0 to 12, with a score of 6 or more in the high-risk category (Hanson & Thornton, 2000).

STATIC-2002. The Static-2002 is a refined scale of the STATIC-99. It contains two subscales that also were coded: one on general criminality (coded from criminal history measures) and one on sexual deviancy perversion (coded from offense characteristics as well as measures of sexual deviancy).

### ***Are Sex Offenders Released from Prison Different from Those Sentenced to Probation Supervision?***

The findings indicate that sex offenders who receive probation are more likely to be Caucasian with most having completed high-school and not gang involved. On the other hand, the prison sample consisted primarily of non-whites, the majority of whom had not completed high-school. The prison sample had a greater percentage of gang members (26%) than the probation sample did (5%). Sex offenders sentenced to prison were convicted of more serious sex crimes based on data from original indictments. At least one count of aggravated criminal sexual assault was on the original indictment of 70.2% of the prison sample compared to 17.3% of the probation sample. Sex offenders released from prison also were more likely to use a weapon and to use physical force during the sex crime for which they were convicted. Moreover, 42.4% of the released imprisoned offenders compared to 9.7% of the probation sample had aggressive and sadistic sexual tendencies. The probation sample consisted of 60% of offenders who victimized strangers whereas only 16% of the prison sample victimized strangers. The prison sample compared to the probation sample also had a higher percentage of offenders who also had been arrested for violent crimes.

In this comparison, the probation and prison sample had similar time to first arrest for any sex crime and for any violent crime once the effects of other risk factors were removed. The logistic regression analysis revealed that the probation sample had a higher rate of any sexual recidivism *during* supervision, but that the probation and prison samples had similar rates of any sexual recidivism and any serious sexual

recidivism after release from supervision. The comparison of prison and probation samples may not be informative about whether incarceration deters sexual offending due to the fact that probation supervision may be able to detect additional crimes and that the samples are very different on a wide array of characteristics.

### ***Examining How Supervision Modified the Risk Factors associated with Sexual Recidivism***

For the probation sample, there were several common risk factors of sexual recidivism during supervision and during periods of not being formally supervised. Three of the common risk factors are included on standardized risk assessment scales: (a) victimized strangers or acquaintances; and (b) at least two prior sentencing dates, and (c) prior arrests for public indecency crimes. In addition, sex offenders who commit another offense during the sex crime beyond unlawful restraint, such as trespassing, burglary, or resisting arrest, were at a higher risk. Furthermore, sex offenders who also had prior arrests for domestic violence crimes had a higher rate of sexual recidivism during and after release from probation than did sex offenders who did not have a history of domestic violence. For the probation sample, two dynamic variables were important defining risk factors: satisfactory or unsatisfactory completion of treatment and the number of missed office visits.

Surprisingly, none of the standardized risk assessment scales predicted both sexual recidivism during supervision and sexual recidivism after supervision. This finding suggests that researchers must investigate further the modifying role of supervision. For the probation sample, prior arrests for all sex crimes and prior arrests for violent crimes only predicted sexual recidivism after release.

Furthermore, sample characteristics also may determine which factors are found to be risk characteristics. For the released from prison sample, there were no risk factors that predicted both sexual recidivism during parole supervision and sexual recidivism after release from parole. Two or more prior convictions, any prior conviction for a sex crime, and whether the offender also committed prior or current domestic violence crimes were risk factors predicting sexual recidivism while on parole supervision. By contrast, the only criminal history measure that predicted

sexual recidivism after release from parole supervision was two or more convictions for a violent crime. The RASSOR scale also accounted for 28% of the classification accuracy beyond chance performance in sexual recidivism after release from parole, but did not significantly predict sexual recidivism while on parole supervision. Three offense characteristics were significant risk factors for sexual recidivism after release from parole, but not during parole supervision. Offenders who had a charge on their original indictment for a sex crime against an adolescent victim were significantly more likely to be arrested for a new sex crime after release from parole. Moreover, sex offenders who reported that they did not use drugs or alcohol before committing the sex crime that placed them in prison and those that reported during their intake interview for prison admission that they used alcohol were at a significantly higher risk of sexual recidivism.

***Identifying Subgroups at Risk of Sexual Recidivism.***

Classification tree analyses were employed to identify the low, medium, and high risk subgroups of sexual recidivism during and after supervision for both the probation and prison samples.

*Risk Subgroups while on Probation Supervision.* The base rate of sexual recidivism during probation supervision was 21%. There were clear differences between counties on their ability to detect sexual recidivism while sex offenders were under probation supervision. Sex offenders who were terminated unsuccessfully from treatment and were in a county with extensive surveillance involving either polygraphs or community random surveillance had a 55% rate of sexual recidivism, indicating a very high risk of repeat sex crimes for this subgroup. Sex offenders who completed treatment successfully were at a high risk of sexual recidivism if the county had extensive or random surveillance in the county; this finding thus suggests that completion of treatment had not significantly reduced the risk of repeat sexual offending and surveillance was necessary to catch sex offenders.

*Risk Subgroups After Released from Probation Supervision.* The base rate of sexual recidivism after released from probation was 10.9%. Offenders who scored 7 or higher on the STATIC-2002 had a low rate of sexual recidivism after release (6%) if they had no prior arrests for any crime and satisfactorily completed treatment. Offenders with a score of 7 or higher on the STATIC-2002 were at high risk if they were supervised in a county with random surveillance or polygraph testing and were unsatisfactorily terminated or dropped out of treatment. Thus, satisfactorily completing treatment moderated the predictive accuracy of the STATIC-2002 scale. Moreover, offenders who scored 6 or lower on the STATIC-2002 scale had a moderately high chance of sexual recidivism after release from probation (18.4%) if they missed an average of at least .88 office visits per month during their probation supervision. Thus, the dynamic variables of missed office visits and treatment noncompliance improved the classification accuracy of the STATIC-2002 scale.

*Risk Subgroups During Parole Supervision.*

In the prison sample, the rate of sexual recidivism while on parole was 4.5%. Domestic batterers were at a high risk of sexual recidivism with a rate of 11.1%. The base rate of any sexual recidivism after release from parole supervision was 6.0%, and for contact sex crimes was 5.4%. For both any sexual recidivism and contact sex crimes during parole supervision, is defined by not using alcohol or drugs before committing the sex crime and having at least one prior arrest for a property crime. One high risk group had not used drugs or alcohol within 24 hours of committing the sex crime that placed them in prison and had six or more disciplinary infractions while in prison. The other high risk group had five or fewer disciplinary infractions and had two or more arrests for property crimes. The two low risk groups had 0% recidivism rates. One low group had five or fewer disciplinary infractions while in prison and either none or one prior arrest for a property crime. The other low risk group had five or fewer disciplinary infractions while in prison and reported that they used alcohol or drugs within 24 hours before committing the sex crime that placed them in prison.

### ***Predictors of Violent Recidivism***

The STATIC-99 was a significant predictor of violent recidivism for both the probation sample and the prison sample. The RRASOR was significant and generalizable for the probation sample, but was unstable though significant for the prison sample; in both samples, it showed weak classification accuracy above chance performance. Across the CTA models, offenders with a prior arrest for a violent crime were classified as high risk if they were in one of these three subgroups: (a) never married and a high school dropout; (b) did not have any VOP for noncompliance with sex offender treatment and were charged with a sex crime against an adolescent victim (b) 33 years of age or younger; (c) 34 years of age or younger and sex offenders' relationship to victim was a stepfather, live-in boyfriend, or grandfather; (d) had two or more prior arrests for a violent crime and a prior incarceration for a non-sexual felony. Two of the very high risk subgroups were never married sex offenders who graduated from high school and had one of the following characteristics: (a) scored 8 or higher on the STATIC-2002; and (b) scored 7 or lower on the STATIC-2002 but the sex offense that placed the offender on probation involved vaginal or anal penetration. These findings indicate that a prior arrest for a violent crime was a significant risk factor and with limited additional information such as age of the offender or noncompliance with treatment professionals could have increased confidence in accurately classifying these repeat offenders as high risk of committing additional violent crimes. Moreover, the findings suggest that for never married high school graduates, the score on the STATIC-2002 had predictive accuracy in classifying offenders as low and high risk so long as the offenders did not have a prior incarceration for a non-sexual felony.

The data did not include treatment noncompliance for the prison sample. However, for the probation sample, treatment noncompliance was an important defining risk factor. In the probation sample, both of the low risk groups for violent recidivism during probation supervision had no VOP for noncompliance with treatment and no prior arrests for violent crime. Sex offenders who were 32 years of age or younger and had one

or more VOPs for treatment noncompliance were at a very high risk of committing a sex crime while on probation if they were scored as medium or high risk on the SACJ-min.

### **Comparison of Three Subtypes of Sex Offenders: Non-violent, Other Violent, and Domestic Batterers**

Few studies, however, have examined the overlap between sexual offending and violent offending, and how sex offenders who also have a propensity to commit violent offenses may differ from non-violent sex offenders. Previous research (Stalans et al., 2004) has found that domestic batterers and other violent offenders have different risk factors for violent recidivism, with criminal history only a significant risk factor for non-family only or generalized aggressors and not a significant risk factors for domestic batterers. Moreover, prior research has found that whether the violent offender was a generalized aggressor (victimized family members, acquaintances, and strangers) or not was the strongest predictor of violent recidivism, with generalized aggressors having the highest rate of violent recidivism. Of course, researchers on predicting sexual recidivism recognize that prior arrests for violent crimes is a risk factor for sexual recidivism, and this characteristic has been included in standardized risk assessment tools such as the STATIC-99 and STATIC-2002. Our research attempted to extend the prior studies on predicting sexual recidivism by examining how three different subtypes of sex offenders , non-violent, other violent, and domestic batterers, were similar and different on characteristics, risk factors, and recidivism rates.

A review of prior studies has found that the average rate of sexual recidivism for a five to six year follow-up period is 13.4% (Hanson & Morton-Bourgon, 2005). Our probation sample shows that the rate of sexual recidivism while under probation (26%) and after release from probation supervision (19%) for domestic batterer is slightly higher than the average across studies, and is significantly higher than the rates for other violent sex offenders and non-violent sex offenders. However, during probation supervision, domestic batterers (26.4%) and non-violent sex offenders (20.6%) had similar arrest rates for sex crimes. Moreover, domestic batterer sex offenders had a comparable rate of arrests for new



serious sex crimes (15.2%) after release from supervision as the rate of 13.4% in prior studies. Thus, our sample appears to have similar propensity to reoffend as samples in prior studies, and the findings should generalize to the population of sex offenders sentenced to community supervision. While under probation supervision, 26% of non-violent sex offenders, 44% of other violent sex offenders, and 66% of domestic batterers were arrested for a new charge of any type, indicating that domestic batterers and other violent offenders had a substantially higher rate of committing new crimes while under supervision than non-violent sex offenders. After being released from supervision, domestic batterers were more likely to recidivate with a sex crime (19%), a serious sex crime (15%), and for possessing and selling drugs (17%) than both other types of offenders. After controlling for all significant risk factors, domestic batterers and other violent sex offenders had a significantly higher rate of sexual recidivism than did non-violent sex offenders. These findings suggest that prior research should make distinctions between domestic batterer sex offenders, other violent sex offenders, and non-violent sex offender. It appears that violent sex offenders, especially domestic batterers, are more tenacious and repeat offenders both during supervision and during the first seven years after release from supervision. Interest in hands off sexual offending and unsatisfactory completion of treatment were significant risk factors for all types of sex offenders. Victimization of acquaintances or strangers was only a high risk factor for domestic batterers and non-violent sex offenders; extra-familial victims did not predict the sexual recidivism of other violent sex offenders. Second, the general criminality scale of the Static-2002 was a significant risk factor for sexual recidivism for other violent sex offenders and non-violent sex offenders; the general criminality scale did not predict the sexual recidivism of domestic batterers. This finding is consistent with Stalans et al., (2004) prior research that found that criminal history was not a significant predictor of violent recidivism for domestic batterers, but was a significant predictor for other violent offenders.

The reported differences among non-violent, other violent, and domestic batterer sex offenders cannot be attributed to other differences in the three groups' index sex crimes that led to their probation sentence. The three groups of offenders did not differ in the type of sex crimes

committed and the nature of these sex crimes. Moreover, this study's measures of the index crimes that placed the offenders on probation were more complete and accurate because information from the original indictment insured that plea bargaining did not distort our ability to code the actual nature of the sex crimes.

### ***Recommendations***

Policymakers and practitioners should consider the implications of several findings in their efforts to improve risk assessment of sex offenders and increase public safety from repeat sexual offending. One clear implication of the findings is that the current risk assessment scales can be improved in predictive accuracy and may not be accurate for all environments or samples. Supervision changed the risk factors that predicted sexual recidivism, especially for the prison sample and offenders who completed treatment successfully. None of the risk assessment scales provided improvement over chance performance for both predicting sexual recidivism during supervision and after supervision. However, all four standardized instruments significantly predicted non-violent sex offenders' sexual recidivism while under probation and after release from probation supervision. The Static-2002 showed significant predictive accuracy in predicting sexual recidivism while under probation supervision, but did not predict other violent sex offenders' sexual recidivism after release from probation. Moreover, none of the risk assessment scales significantly predicted the sexual recidivism of the released from prison sample. The inconsistent performance of the standardized risk assessment instruments can be attributed to the fact that different subgroups of sex offenders have unique risk factors. For example, although all standardized risk assessment scales place much importance on criminal history, the Static-2002 criminality subscale did not predict domestic batterer sex offenders' sexual recidivism. Moreover, in the prison sample, there were no common risk factors that predicted both sexual recidivism during supervision and sexual recidivism after release from parole supervision. Thus, risk assessment scales must be validated for local samples. Consistent with this recommendation, there were clear effects of the extensiveness and randomness of probation surveillance on rates of sexual

recidivism across counties. Counties with more extensiveness and random surveillance detected higher rates of sexual recidivism; in these counties, sex offenders who had successfully completed treatment and those who dropped out were at a high risk of sexual recidivism while under probation supervision.

Moreover, our results show that three changeable behaviors are important indicators of high risk of sexual recidivism: noncompliance with treatment, missing scheduled probation office visits, and six or more disciplinary incidents while in prison. All three behavioral indicators improved upon the predictive accuracy of the Static-2002, and were consistent predictors across supervision environments. Additionally, there were some common risk factors across supervision and non-supervision environments. The strongest two predictors were: (a) an arrest for a violation of an order of protection or trespassing offense, and (b) offender also was a domestic batterer. Sex offenders who were domestic batterers had the highest rate of sexual recidivism after release from supervision. This finding questions the practice of placing offenders in specialized supervision programs based on their current offense; sex offenders who are also domestic batterers appear to be very tenacious offenders and may require different conditions and supervision strategies than other sex offenders. Other common predictors, which are on standardized risk assessment scales and have been found in prior research, were also found. An interest in hands off sexual offending, victimizing non-family member, and having two or more sentencing dates were stable predictors.

## Introduction

It is estimated that about 234,000 convicted sex offenders are under the care, custody, or control of corrections agencies in the United States on any average day. Of these offenders, almost 60% are under conditional supervision in the community (Greenfeld, 1997). Sex offenders are at a high risk of committing additional sex crimes after they have been convicted of a sex crime. For example, in a longitudinal study of sex offenders released from a secured treatment facility for sexually dangerous predators, the failure rate of 52% of child molesters having a new sexual offense charge over a 25 year period was much higher than the failure rate of 39% of adult rapists having a new sexual offense charge. Furthermore, child molesters committed a new offense on the average one year sooner than did adult rapists (Prentky et al., 1997). The public and criminal justice professionals are very concerned about stopping sex offenders from committing additional sex crimes while they live and work in the community. An understanding of the risk factors associated with sexual and violent recidivism and the generalizability of risk assessment tools can assist criminal justice professionals in their supervision of released imprisoned sex offenders.

### Overall Objective of Proposed Research

Over the last couple of decades, much research has accumulated to create more accurate formal standardized assessment tools that criminal justice and treatment professionals can use to assess sex offenders' risk of committing additional sexual offenses (see for review Barbaree et al., 2001; Hanson & Morton-Bourgon, 2005; Hanson & McCarthy, 2001). Prior research has examined the offense, criminal history, demographic, mental health, substance use/abuse, and demographics that indicate a higher risk of sexual offending, but still has not determined how best to combine significant predictors to increase accuracy of predicting which offenders are at high-risk of sexual or violent recidivism. Our main objective is to determine whether these two populations have different offender, criminal history, offense, and behavioral risk factors associated with sexual recidivism. We also examine the risk factors associated with violent recidivism. Our investigation aims to create more

valid and accurate risk assessment tools of violent or sexual recidivism for each of these populations so that criminal justice probation and parole officers, treatment professionals and judges can make more accurate assessments of risk of sexual or violent reoffending. More accurate assessments will lead to more efficient use of monitoring resources, more effective treatment plans, and increase community safety.

### *Review of Literature*

#### *Comparing Sex Offenders Sentenced to Probation and Released-Imprisoned Sex Offenders*

We propose to compare two populations of sex offenders who were convicted of aggravated criminal sexual abuse/assault or criminal sexual assault: (a) sex offenders supervised and released from probation; and (b) released imprisoned sex offenders. This comparison will highlight how these two populations differ on mental, social, demographic and criminal history characteristics and their rates of sexual and violent recidivism. Most importantly, the comparison will identify whether the same risk factors and assessment tools that predict sexual recidivism can be applied with the same predictive accuracy across these two populations. Studies have not explicitly compared these two populations of sex offenders on the characteristics that predict sexual and violent recidivism even though the populations may differ on criminal history and other characteristics. For example, forty-five percent of sex offenders sentenced to a state prison had committed their sex crime while under community supervision of a probation or parole agency (Greenfeld, 1997). By contrast, in our sample of 964 sex offenders on standard or specialized probation only 14% of sex offenders committed new sex crimes while serving a probation sentence during our two year follow-up (Stalans et al., 2001; Stalans et al., 2002). One obvious difference between these two populations of sex offenders may be that released imprisoned sex offenders may have a greater number of prior arrests or convictions for sex crimes. Imprisoned sex offenders compared to other violent imprisoned offenders are more likely to have other convictions for sex offenses, but less likely to have convictions for non-sexual violent crimes (Greenfeld, 1997). By contrast, the majority of sex offenders in our probation sample did not have a prior arrest for a sex crime at the time that they were sentenced to

probation (Stalans et al., 2001). Despite this lack of official criminal history, sex offenders averaged three years of committing sex crimes before they were caught and over half of the sex offenders had three or more counts of sex crimes charged against them on the original indictment (Stalans et al., 2001; Stalans et al., 2002). Thus, official criminal history provides a limited underestimate of the frequency, duration, and severity of sexual offending.

Another difference between sex offenders serving probation sentences and those serving prison sentences is that sex offenders serving probation are more likely to be court-mandated to participate in sex offender treatment. Greenfeld (1997) found that only 14% of imprisoned sex offenders received any sex offender treatment. Conversely, most sex offenders, especially those sentenced to specialized sex offender probation programs, are mandated to participate in treatment. Imprisoned sex offenders thus may have less opportunity to participate in treatment and also may be more resistant to treatment with some imprisoned sex offenders having probation sentences revoked due to noncompliance with court-mandated treatment.

Another benefit to comparing released-imprisoned sex offenders and sex offenders serving and released from probation is to assess the deterrent effect of prison time compared to a sentence of standard probation or specialized intensive supervision probation. The current research will be able to explicitly compare the time to new arrest for a sex crime while on probation/parole supervision as well as the time to a new arrest for a sex or violent crime after being released from supervision. After controlling for differences in criminal history and other background characteristics, how much of a higher risk, if any, are sex offenders who are released from prison? Due to the leniency of the sentence, do sex offenders who receive probation sentences recidivate in a shorter amount of time and at a higher rate? Answers to these questions may inform criminal justice professionals and policymakers so that evidence-based decisions about the allocation of resources can be made.

These assumed differences between released-imprisoned sex offenders and sex offenders who served probation terms also raise the issue of whether risk assessment scales created on sex offenders released from secured prison or mental health institutions are optimally accurate and valid for sex offenders serving or released from probation. Most risk assessment instruments such as the Static-99 or Structured Anchored Clinical Judgment (SAC-J) scale have been created using sex offenders who have been sentenced to prison or been detained in an inpatient sex offender treatment center for dangerous sexual offenders (e.g., Hanson & Thornton, 2000). In a meta-analysis of 82 studies in 2005, the majority of studies used samples comprised of sex offenders released from institutions and only seventeen studies examined samples of sex offenders who were exclusively residing in the community (Hanson & Morton-Bourgon, 2005). Of the seventeen studies that examined sex offenders residing in the community, only a few of these studies involved samples of sex offenders who were serving probation terms (e.g., Hanson & Harris, 2000). Furthermore, several of the community-based samples were drawn from treatment clinics and it is unclear whether sex offenders eventually served prison time or probation sentences (Firestone et al., 1999; Firestone et al., 2000).

Prior risk assessment research has several limitations as it applies to using these tools in probation departments, parole decisions, or civil commitment hearings for dangerous sexual predators (for a review of the validity of these instruments see Barbaree et al., 2001; McCarthy, 2001; Hanson and Thorton, 2000). Researchers debate the appropriate statistical tools to use in determining the predictive accuracy of risk assessment instruments (see Vrieze & Grove, 2008; Stalans et al., 2004). Most of the validity studies have relied on statistical tools such as ROC analysis and logistic regressions that implicitly assume that the statistically significant risk characteristics apply to all sex offenders. These risk characteristics then are weighted using a linear (additive) method. However, Stalans' and colleagues' research on predictors of sex recidivism during two-year follow-up while offenders were serving probation sentences used non-linear classification tree analysis (CTA) to determine the optimal way to combine significant risk factors so that predictive accuracy was maximized (see Stalans et al., 2001; Stalans et al., 2002). Some research suggests

that risk factors do not apply to all sex offenders and that predictive accuracy may be increased when risk factors are combined in multiplicative or non-linear ways. For example, recent research has found that the interaction between deviant sexual arousal toward children and psychopathic deviancy is a better predictor of sexual recidivism than linearly combining the two risk factors (Harris et al., 2003). Furthermore, some risk assessment scales have the same predictive accuracy at predicting sexual recidivism and violent recidivism (Harris et al., 2003) whereas other risk assessment scales have better accuracy at predicting sexual recidivism (see Craig, Beech, & Browne, 2006). These findings raise the question of whether a risk assessment scale that specializes in predicting sexual recidivism is really necessary or whether probation departments should use more general recidivism scales such as the Violent Risk Appraisal Guide (VRAG) should be used to assess violent recidivism risk (e.g., Harris et al., 2003). Before this question can be definitively answered, research must examine whether risk assessment scales should be designed for specific subgroups of sex offenders.

Prior research that compares the predictive accuracy of risk assessment tools has not examined whether specific tools are more accurate for certain populations (e.g., released imprisoned sex offenders, incest offenders), though researchers have suggested that tools be developed for subgroups such as incest offenders and extrafamilial offenders (e.g., Firestone et al., 1999). Second, most of the samples used to create and validate the scales have been drawn from prisons or secured treatment facilities, and such samples may differ significantly from sex offenders sentenced to probation. Third, researchers have not considered how supervision may change the risk factors associated with sexual recidivism or attempted to identify persistent sex offenders who are arrested for violent or sexual recidivism during supervision and after supervision is completed. Finally, most instruments have not included dynamic factors related to changes in sex offenders' behavior. The current research addresses these limitations. The remainder of the introduction provides a review of risk assessment scales and the prior literature on predicting sexual recidivism is provided to provide a background of the accumulated knowledge of predicting sexual recidivism.



### *Prior Risk Assessment Tools*

The risk assessment field is constantly improving risk assessment tools through validity and generalizability studies. There are several assessment tools to determine the risk of sexual recidivism, but professional practitioners have difficulty determining which assessment instrument should be used (for an overview of these tools see Beech, Dawn, & Thornton, 2003). Some research indicates that using multiple risk assessment scales does not increase predictive accuracy and given the cost and time to administer these tools practitioners should not administer more than one (Seto, 2005). Furthermore, another study compared six risk assessment instruments on the prediction of sexual recidivism during an average follow-up of 4.5 years after sex offenders who participated in treatment were released from prison and were on parole supervision (Barbaree et al., 2001). They found that the six instruments performed at the same level of predictive accuracy. Based on an empirical investigation, Seto (2005) concluded “evaluators assessing the long-term risk to reoffend of sex offenders should select the single best available actuarial scale for this purpose, rather than scoring and interpreting multiple actuarial risk scales. There was no advantage of scoring and interpreting multiple actuarial risk scales, despite testing several combinations and using a variety of different analytical approaches” (p. 162). Researchers further note that the best predictive scale may vary by jurisdiction and offender characteristics (Seto, 2005; Hanson & Bussiere, 1998). The studies cited above did not examine whether one risk assessment tool outperformed other assessment tools for certain populations of sex offenders. Thus, our investigation will address which risk assessment tool is best and whether better assessment tools can be created when researchers do not assume that all risk factors apply to every subgroup of offenders.

In addition to parole officers using risk assessment tools to predict more short-term sexual recidivism while on parole, risk assessment tools are often used in evaluations of whether the prosecutor should pursue a civil commitment of a sex offender through the Sexually Dangerous Predator Statue. During these hearings, established risk assessment scales are often challenged as inappropriate and inaccurate for the population

of sex offenders in a particular state (see Berlin et al., 2003). Because recent research suggests that assessment tools that predict violent recidivism more accurately identify high-risk sex offenders who are appropriate for commitment under the sexually dangerous predator civil commitment statute (Rice et al., 2006), we also will be determining the best way to combine significant risk factors for violent recidivism, and will develop an assessment tool to determine the risk of violent recidivism. We will determine how well each of our created tools performs in accurately classifying persistent sex offenders from non-persistent sex offenders. Our focus on the validity and generalizability of risk assessment tools, as well as the characteristics of persistent sex offenders, will provide important information to courts, prosecutors, probation and parole professionals and treatment professionals. We briefly describe each of these tools in the following paragraphs.

#### *Prior Risk Assessment Tools*

Several studies have now concluded that the standardized risk assessment instruments' performance at predicting sexual recidivism is very similar and one risk assessment scale does not offer an advantage over other risk assessment scales (see Barbaree et al., 2001; Seto, 2005). For example, a study compared six risk assessment instruments on the prediction of sexual recidivism during an averaged follow-up of 4.5 years after sex offenders who participated in treatment were released from prison and were on parole supervision (Barbaree et al., 2001). In a follow-up to Barbaree et al., 2001's study, researchers found that the predictive accuracy of the six instruments for sexual recidivism had Area Under the Curve (AUC) coefficients ranging from .61 to .71, and all confidence intervals overlapped; these findings also indicate similar performance across risk assessment scales (Langton et al., 2007). Other research has found that all standardized scales were significant predictors of sexual recidivism, but that predictive accuracy varied by the amount of missing data allowed in scoring the instrument as well as the length of the follow-up period (Harris et al., 2003). Researchers further note that the best predictive scale may vary by jurisdiction and offender characteristics (Seto, 2005; Hanson & Bussiere, 1998).

Rapid Risk Assessment for Sex Offender Recidivism (RRASOR). Hanson (1997) developed the RRASOR based on a meta-analysis of prior research. He selected the risk factors that were most strongly and significantly related to sexual recidivism across the studies. The Rapid Risk Assessment for Sex Offender Recidivism (RRASOR) is the most popular risk assessment tool in the United States and Canada and combines only four characteristics in a linear fashion. The RRASOR considers: male victim, unrelated victim, prior sex offenses, and being released from prison (or an inpatient secured institution) before the age of 25. Prior sexual history is given greater weight with one point assigned for one prior conviction or two prior arrests; two points assigned for three prior convictions or three to five prior arrests, and three points assigned for four or more prior convictions or six or more prior arrests. One clear shortcoming of the RRASOR is that it relies on only official criminal history and ignores prior but undetected crimes that are disclosed to probation officers or treatment evaluators. Some research has found that the RRASOR was not a significant predictor of sexual recidivism (See Epperson et al., 1999).

Structured Anchored Clinical Judgment—Minimum Version (SACJ-MIN). The SACJ-MIN has a two-step scoring system. In the first step, five characteristics are scored: any current sexual offense, any prior sexual offense, any current nonsexual violent offense, any prior nonsexual violent offense, and four or more sentencing occasions. If offenders have four or more of these five factors, they are considered high risk. In the second step of the SACJ-MIN, an offender's initial risk assessment is moved one category if he has two or more of the following eight characteristics: any stranger victims, any male victims, never married, convictions for hands-off sex offenses, substance abuse, placement in residential care as a child, deviant sexual arousal, and psychopathy (Hanson & Thorton, 2000).

STATIC-99. The Static-99 is a combined scale of the RRASOR and the SACJ-MIN, and has better predictive accuracy than the RRASOR or the SACJ-MIN. Its name indicates that it includes only static variables and that it was developed in 1999. Prior sexual history is scored the

same way as in the RRASOR. Each of the following nine risk factors adds one point to the total score: (1) four or more prior sentencing dates; (2) any convictions for non-contact sex offenses; (3) current index nonsexual violent offense; (4) prior nonsexual violence arrests; (5) any unrelated victims; (6) any stranger victims; (7) any male victims; (8) being between the age of 18 to 24 at the time of arrest; and (9) never lived with lover for at least two years. Scores can range from 0 to 12, with a score of 6 or more in the high-risk category (Hanson & Thornton, 2000).

Probation officers and therapists should note the warning of Hanson and Thornton (2000): “Static-99 is intended to be a measure of long-term risk potential. Given its lack of dynamic factors, it cannot be used to select treatment targets, measure change, evaluated (sic) whether offenders have benefited from treatment, or predict when (or under what circumstances) sex offenders are likely to recidivate” (p. 132). Such warnings also apply to the RRASOR and other instruments. These instruments may have little predictive value in the short period of time that offenders are on probation or parole, which emphasizes why empirical investigations of the differences in risk predictors of long-term sexual recidivism compared to sexual recidivism during probation or parole supervision are needed.

*Risk Assessment Tool of Sexual Recidivism.* Stalans and colleagues developed the Risk Assessment Tool of Sexual Recidivism based on classification tree analyses of two year follow-up data of sexual recidivism while sex offenders were serving probation (Stalans et al., 2002). The RAT-SR is presented in Table I. The RAT-SR has three stages, with no further stage necessary after the offender has been classified as high risk. In stage one, there are five groups of child molesters that are at high risk. If the offender’s characteristics do not match the defining features of any of these five groups, the assessment continues to stage two where there are three groups of sex offenders who are at medium risk of sexual recidivism. The assessment then continues to stage 3, where five characteristics are scored to determine whether any previously classified medium risk offenders are high risk as well as to classify the offenders that have not been placed in a prior category. Future research will need to validate

the RAT-SR with new samples of data, but it shows promise for implementation in the sample of 642 offenders from Lake, Winnebago, and DuPage County.

RAT-SR accounted for 27.8% of the possible improvement in classification accuracy above what can be explained by chance, and the high risk category identified 43 offenders (51.8% of the observed cases) that had sexual recidivism. In comparison, the STATIC-99 and SACJ-MIN accounted for only 16% of the possible improvement in classification accuracy above what could be explained by chance, indicating that the RAT-SR explained an additional 11.8% of the improvement in classification accuracy, and had a nearly 74% greater effect strength (Stalans et al., 2002). In our prior research all of the classification tree analysis models explained more classification accuracy than either the SAC-JMin or Static-99. Moreover, the RRASOR was not a significant predictor of sexual recidivism that occurred during the two years while sex offenders were serving probation. RRASOR was not significant because it places much importance on prior arrests and convictions for sexual crimes and neither prior arrests nor convictions were significant predictors of sexual recidivism during the two-year follow-up of the sample of sex offenders on probation (Stalans et al., 2002). This research highlights the importance of comparing the performance of risk assessment tools for five year long-term after supervision sexual recidivism for the probation sample. Because the RRASOR, SACJ-Min and STATIC-99 were primarily validated based on samples of sex offenders released from prison or secured treatment facilities, they may be weak predictors of long-term sexual recidivism for sex offenders who served and were released from probation.

*Dynamic Predictors.* Hanson and Harris (2000) attempted to determine the changeable characteristics of sex offenders that predicted recidivism. They designed a retrospective study and interviewed probation officers about a sample of sex offenders that had recidivated while on probation and a sample of sex offenders that had not recidivated to assess potential predictors of sexual recidivism. They found that recidivists compared to nonrecidivists showed increased anger, were more often disengaged from or uncooperative with treatment and community

supervision, missed scheduled appointments, attempted to deceive the officers, and had more stable sexual preoccupations. The researchers also coded the case notes of probation officers that are recorded after each meeting with a sex offender. Access to victims, failure to acknowledge recidivism risk, increased signs of sexual preoccupations and deviance, and increased anger were able to differentiate recidivists from non-recidivists. The findings also indicated that the changeable characteristics predicted sexual recidivism even after controlling for significant offense and criminal history characteristics. Prior research has consistently shown that treatment noncompliance increases the likelihood of sexual recidivism (Hanson & Bussierre, 1998; Hanson & Morton-Bourgon, 2005). We have coded dynamic predictors such as substance abuse, victim contact, sadistic or anger tendency, and treatment compliance for our probation sample and will be also collecting disciplinary problems for the released-imprisoned sex offenders.

#### *Do Risk Factors Vary Across Sub-groups of Sex Offenders?*

Numerous studies have investigated predictors of sexual recidivism, but few studies have examined how risk factors vary across subgroups of sex offenders. Hanson and Bussierre (1998) provided a meta-analysis review of 61 prior studies and Hanson and Morton-Bourgon (2005) provided a meta-analysis review of 82 prior studies. Both reviews found that objective sexual arousal to children is the strongest predictor of sexual recidivism and another significant predictor is prior arrests or convictions for sex crimes. For both of these risk factors, there are other studies that suggest their predictive ability varies across subgroups of sex offenders.

For example, studies suggest objective sexual arousal to children may not be a strong predictor of incest offenders' sexual recidivism (e.g., Firestone et al., 1999) but a strong predictor of extrafamilial child molesters' sexual recidivism (e.g., Firestone et al., 2000). Supporting this prior research, using classification tree analysis (CTA), we found an interaction between deviant sexual arousal to children and offender's relationship to the victim on sexual recidivism while on probation (Stalans et al., 2001). Of offenders with a sexual preference for children, 85% of those who

victimized strangers or acquaintances compared to only 29% of those who victimized family members, committed sexual recidivism during the two year follow-up of sexual recidivism that occurred while offenders were still serving their probation sentence. Incest offenders may choose their victims to minimize the risk of detection and therefore even though they are sexually aroused by children will refrain from new offenses while under probation or parole supervision.

Research also has found that prior arrests or convictions for sex crimes may not be a significant predictor of sexual recidivism for sex offenders who have successfully completed treatment. Studer and Reddon (1998) found that prior sexual offense convictions was a significant predictor of sexual recidivism among sex offenders who dropped out of treatment, but was not a significant predictor of sex offenders who completed treatment. Their sample consisted of sex offenders participating in an in-patient sex offender treatment program. This finding could not be explained by differences in sexual offense conviction rates because the two groups had similar mean number of prior convictions for sexual offenses. Instead, Studer and Reddon (1998) argued that sex offender treatment was designed to reduce sex offenders' reliance on their prior offending patterns and therefore, if successful, prior sexual history should not be a predictor of new sexual recidivism. Consistent with this argument, prior arrests for sex crimes was not a significant predictor of sexual recidivism for the total sample of sex offenders on probation mandated to participate in sex offender treatment. When completers were separated from dropouts, however, we found that prior arrests for sex crimes predicted sexual recidivism during the two year follow-up period for those who dropped out of sex offender treatment but did not predict sexual recidivism for sex offenders who completed the treatment (Stalans et al., 2002). These findings suggest that prior arrests and convictions for sex crimes may not be significant risk factors for sex offenders who have completed sex offender treatment.

Other risk characteristics have different predictive accuracy across different sub-groups. For example, prior research has found that single marital status is a significant, but modest predictor of sexual recidivism (Hanson & Bussiere, 1998). We found that never married or divorced men

with access to children had a moderately high chance of committing a new sex crime whereas never married or divorced men without access to chance had a low chance of committing a new sex crime (Stalans et al., 2002).

Recent research also suggests that risk factors may vary by ethnicity. The RRASOR and Static-99 significantly predicted sexual and violent recidivism among Nordic and European sexual offenders, but did not predict sexual or violent recidivism among African Asian sex offenders (Langstrom, 2004). This variation across ethnicity may also reflect a variation across age of the victim. African Asian offenders were more likely to have victimized a child under 12 whereas Nordic and European sexual offenders victimized adolescents or adults. Another possibility is that official criminal history measures were less reliable or valid measures for African Asian sex offenders who were more often recent immigrants. This study further highlights why empirical studies should examine how the predictive accuracy of risk factors varies across subgroups of sex offenders as well as contexts such as supervision compared to after supervision.

*Applying Deterrence Theory: Predicting which offenders will be deterred during supervision*

The prior research on sex offenders sentenced to probation has focused on identifying the subgroups who are at low, medium, or high risk of committing sexual recidivism while still serving their probation sentence (see for a review Stalans, 2004; also Stalans, Seng & Yarnold, 2002; Stalans et al., 2001). Studies have not examined whether offense and offender characteristics predicting sexual recidivism changed depending on whether the follow-up period was short-term or longer-term or whether the follow-up period focused on a time in which sex offenders were under criminal justice probation or parole supervision. Some prior research suggests that supervision may deter some specific subgroups of sex offenders from committing additional crimes at least in the short-term (see Stalans, 2004). For rational calculating sex offenders, such as incest



offenders, they may refrain from sexual recidivism while on probation or parole but when the likelihood of detection is lower after release from supervision they may begin to sexually reoffend.

Beccari (1963), an 18<sup>th</sup> century philosopher, noted that detection and punishment must be swift, certain, and severe in order to deter offenders. The celerity and certainty of detection and punishment are much more clearly illuminated in the specialized sex offender probation programs than in the standard probation programs; thus, sex offenders in the specialized programs should more readily believe that punishment will be swift, certain and severe if they commit another crime. For example, offenders caught engaging in high-risk behaviors (e.g., masturbation to pornography, visiting school playgrounds, and contact with minors) received administrative sanctions such as assignment to the Sheriff's Work Assistance Program for several days. Similar to the specialized sex offender program, offenders sentenced to prison terms have learned that the punishment will be more severe for sex offenses. Deterrence research, however, has found that the likelihood of getting caught is considered more in decisions about whether to commit a crime than is the severity of punishment (e.g., Paternoster, 1987).

Which subgroups of sex offenders are more likely to be deterred or controlled and which subgroups will continue with their normal offending behavior despite increased restrictions, contact, and surveillance? We used deterrence theory to identify these subgroups of sex offenders. The deterrence hypothesis requires that sex offenders engage in a rational calculation of their chance of being caught and punishment in their decision-making about whether to commit a new offense. Because sex offenders interested in voyeurism and exhibitionism rarely have deviant sexual preferences and are motivated to commit these offenses due to the excitement of the low risk of being caught (Marshall, Payne, Barbaree, & Eccles, 1991), Stalans, Seng, and Yarnold (2001) proposed that sex offenders interested in hands off sexual offending would have a lower rate of sexual recidivism in the specialized program compared to the standard program. This hypothesis was supported in the Lake County sample for sexual, violent, and general recidivism, but did not receive support in the DuPage County sample for any measure of recidivism.

Analyses of the DuPage County data indicated that sex offenders interested in hands off sexual offending in the specialized program compared to these offenders in the standard program were less rational in their sexual offending and more driven by compulsive or impulsive behavior. DuPage County hands off sex offenders in the specialized program were more likely to have two or more sexual paraphilia, to have a current mental health problem and to have committed sexual offending for a longer period of time than their counterparts in the standard program. Lake County hands off sex offenders were similar in the specialized and standard program and much less likely to have mental illness or sexual paraphilia. The difference in these subgroups of sex offenders interested in hands off sexual offending as well as the weaker surveillance of the DuPage County program may account for the lack of a reduced recidivism rate in the DuPage County program. In the proposed research, we expect that sex offenders interested in hands-off sexual offending will have higher sexual recidivism rates after supervision is completed than during supervision. Because supervision deters sex offenders interested in hands-off sexual offending, we expect that different risk factors will predict sexual recidivism during supervision and sexual recidivism after supervision for this subgroup.

Sex offenders who have served a prior probation sentence and were sentenced to specialized intensive supervision or were released from prison may realize that the next conviction will lead to a prison sentence; conversely, sex offenders who receive another sentence of standard probation after already serving a probation sentence may conclude that the system is lenient and they are unlikely to be caught or face severe consequences in the future. Thus, we hypothesize that sex offenders who had a prior probation before the incident offense will be deterred while under intensive supervision probation or parole whereas those who received standard probation will have higher rates of sexual and violent recidivism. In our short-term evaluation of the Winnebago program, sex offenders with a prior period of probation had significantly lower general and violent recidivism rates in the specialized program than in the standard program. Because deterrence only really works when offenders believe that they are being watched or have a high likelihood of being caught, it is possible that repeat offenders will continue sexual

offending after supervision is completed. Our findings will indicate the costs and benefits of proposals such as life-time probation sentences for certain sex offenders.

Sex offenders who are employed full-time and currently married also have more to lose if caught committing another sex crime. In our proposed research, we will test the interaction between type of probation and whether married and full-time employed. We predict that currently married and full-time employed offenders will have a lower sexual and violent recidivism rate in the specialized probation group and prison-released group than in the standard probation group, and that this subgroup of offenders may have different risk factors associated with sexual recidivism during supervision compared to after supervision because they will rationally assume less likelihood of detection after supervision.

Theoretically, mentally ill sex offenders, which includes personality disorders and offenders who have sexual preference for children, are a group that are less likely to be deterred through increased supervision or prison terms. There are several different lines of research that supports this proposition. For example, based on interview data, men who raped out of anger or revenge did not consider the likelihood of detection or punishment (Hale, 1997). Moreover, research indicates that mentally ill offenders have an increased risk of committing violent crimes (see for a review Lyons, Hart & Webster, 2001; Monahan & Steadman, 1994), and other research has shown that violent offenders are less likely to be deterred (Ehrlich, 1973; Decker and Kohfeld, 1990). Additionally, some theories suggest that sexual urges motivate offenders to commit sex offenses (see Marshall, Law, & Barbarbee, 1990). Supporting these theories, a recent meta-analysis found that an objective sexual preference for children (having physiological arousal to pictures of children) was the strongest predictor of sexual recidivism (Hanson & Bussierre, 1998). If sex offenders who have sexual arousal toward children commit sex crimes due to sexual urges, they may not think about the consequences of detection before committing the sex crimes. The research team (Stalans, Seng, & Yarnold, 2002) proposed and found that mentally ill sex offenders, psychopathic deviants, and sex offenders with sadistic tendencies had a significantly higher sexual and violent recidivism rate in the Lake County

specialized program than in the Lake County standard program. Stalans and colleagues suggested that these groups of sex offenders do not make rational decisions and cannot be deterred, but the specialized program with its increased surveillance and monitoring is better able to detect the new sex crimes. Supporting this argument, prior research has found that psychopathic deviants and sadistic offenders are likely to continue to offend even though increased surveillance and restrictions have been added and are not good candidates for treatment (e.g., Seto & Barbaree, 1999). In our comparison of the risk factors associated with sexual recidivism during and after supervision, we will investigate the characteristics that define persistent sex offenders, defined as those who commit sexual recidivism both during and after supervision. We predict that mental illness, intimate partner violence, sadistic or anger tendencies, and psychopathic deviancy are some of the characteristics of persistent sex offenders. Prior research, however, has not empirically examined persistent offending through the perspective of ignoring the increased likelihood of detection while under supervision. We will determine which offender, offense, and criminal history characteristics can discriminate among offenders who have committed two sex crimes (one during supervision and one after supervision), offenders who committed a sex crime only after supervision, and those who did not commit a sex crime.

### *Outline of Report*

Chapter 2 provides an overview of the research design used to collect data from samples of probation supervised and prison-released sex offenders. It also provides an overview of the characteristics of the probation sample and the prison-released sample as well as the coding of the data. The chapter ends with a section that explains the types of statistical tools used in the report. Chapter 3 addresses the question: To what extent does supervision affect which offense and offenders' background, behavioral, mental health and sexual deviancy characteristics predict

sexual recidivism? Chapter 4 examines the predictors of violent recidivism. Chapter 5 provides a comparison of the prison-released sample and the probation supervised sample on recidivism rates and predictors of recidivism as well as differences in background, criminal history and offense characteristics. Chapter 6 addresses the question: Do non-violent sex offenders, other violent sex offenders, and domestic batterer sex offenders have different rates of sexual recidivism and have different risk factors that predict sexual recidivism? Moreover, this chapter examines whether the standardized risk assessment instruments show similar performance at predicting sexual recidivism for each of these three subtypes. This chapter thus examines the role of violence in modifying the risk factors associated with sexual recidivism as well as how similar these three subtypes are on important risk factors that have been found in previous studies. The findings in these chapters provide several recommendations for improving risk assessment scales of sexual recidivism.

## Chapter II. Methodology for Identifying Groups that are at High-Risk of Sexual or Violent Recidivism During and After Supervision

### *Research Design and Sampling*

The research team selected a control sample of 250 convicted male sex offenders on standard probation in Cook County. Each of the 250 offenders was convicted of either aggravated criminal sexual assault, criminal sexual assault, or aggravated criminal sexual abuse against a minor (each of which are felony sex offenses) and was sentenced to a term of standard probation between January 1, 1993 and January 1, 1997. The team also coded information for 81 offenders in the Adult Sex Offender Program. Most of these offenders (76) had entered the program and had completed an intake interview as of September 30, 1998. The remaining five offenders entered the program after September 30, 1998, but we opted to include them in our sample because we had been receiving monthly treatment reports from their treatment provider. The Cook County standard and specialized samples were comparable on 20 characteristics including prior arrests for violent and sex crimes and scores on the Static-99 and SACJ-Min. The specialized sample, however, was significantly more likely to victimize a family member and to victimize a child under the age of 8 whereas the control sample was significantly more likely to have a prior arrest for any crime and a misdemeanor crime.

In DuPage County, the research team selected control cases from lists of sex offenders on standard probation between January 1993 and June 1996, and all cases sentenced from July of 1997 and May of 1999 were included in the specialized probation sample. There were 110 standard probation cases and 105 cases on specialized probation. The specialized and control samples were found to be similar on the vast majority of the 54 demographic, offense, and risk predictor characteristics examined. The specialized sample, however, included a significantly greater

percentage of offenders that have committed prior sex crimes, who have more sexual paraphilia, who have a current mental health problem, and who are at higher risk of sexual recidivism based on the SACJ-Min.

In Lake County, the research team coded information for 104 offenders in the specialized sample and 104 offenders in the control sample. All cases that were sentenced between July 1997 and May 1999 were included in the specialized sample. The research team selected control cases from generated lists of sex offenders on standard probation between 1994 and July of 1997. Though similar on 49 characteristics, the Lake County specialized sample was more likely to have at least one prior arrest and one prior conviction whereas the control sample showed somewhat lower socio-economic status and a previous history of mental health treatment combined with greater illicit drug use.

In Winnebago County, the research team coded information for 105 offenders in the specialized sample and 103 offenders in the control sample. All cases that were sentenced between July 1997 and February 2000 or were grandfathered into the specialized program were included in the specialized sample. The research team selected control cases from lists of sex offenders on standard probation between June of 1989 and July of 1997. Cases were randomly selected through selecting every fourth case in an alphabetized list of offenders until the sample size was reached. The specialized and control samples were essentially similar on the 54 demographic, offense and risk characteristics examined.

#### *Characteristics of the Final Sample of 846 Sex Offenders on Probation*

The total probation sample across all four counties is 989; however, of this sample, only 846 sex offenders were included in the analyses. Of the sex offenders excluded from the analyses, 19 sex offenders were deported or fled to Mexico, 3 offenders died, 2 offenders moved to other states, 20 offenders were female, and the criminal history record could not be located for the remainder. We did not include female sex offenders due to the small sample and so that the sample was comparable to our all male sample of sex offenders released from prison. We also did not include sex offenders who were deported, moved to other states or died due to the unreliability and incompleteness of their Illinois Criminal

History Record. Probationers ranged in age from 15 to 80 with a mean age of 33.6, (median = 32; sd = 12.4). The majority (52%) were white, non-Hispanic followed by African-Americans (25.1%), Hispanics (20.2% and the remainder composed of Native Americans and Asians/Pacific Islanders and “other” totaling (2.7%). About 47% were never married offenders, 29.7% married, 13.8% divorced and the remainder separated or widowed. Approximately a quarter of the sample (27.6%) had some college education or even obtained an undergraduate degree (45 offenders) or a graduate degree (21 offenders). About 30% had at least completed high school or obtained a GED, and 38.5% had not completed high school. The majority of the sample was employed either full-time (50.6%) or part-time (18.2%). The annual income of more than half the sample (54.7%) was below \$13,500, and 11.7% earned at least \$30,000.

Based on the RRASOR, 22% scored 0, 34.5% scored 1, 33.4% scored 2, 8.7% scored 3, and 1.5% scored 4 or 5. The sample also was scored on the Static-2002, Static-99 and SACJ-min. Based on the Static-99, 26.3% are low risk, 36% are medium-low risk, 32.6% are medium high risk and 5.1% are high risk. Based on the SACJ-Min, 26.0% are low risk, 49.8% are medium risk, and 24.2% are high risk. The scores on the Static-2002 ranged from 2 to 11 with 20.2% having a score of 2, 3, or 4, and 33.2% having a score of 8 or higher, with an average score of 6.36 (median = 7.0; stddev = 1.94). The scores on the subscale of sexual perversion on the Static-2002 risk assessment had an average of 1.58 (median = 2; stddev = .85).

In addition to the demographic and social characteristics, offense and criminal history attributes were tested as predictors of sexual and violent recidivism. For the sex crime that placed the offenders on probation, almost half (47%) of the offenders were convicted of aggravated criminal sexual abuse, 18.9% were convicted of criminal sexual assault, 1 offender was convicted of aggravated criminal sexual assault, 12.2% were convicted of pornography, 9.6% were convicted of criminal sexual abuse or indecent solicitation, and 11.7% were convicted of public



indecent. Of the sex offenders, 5.8% were gang members. Table 2.1 provides a description of the other criminal history and offense characteristics used as predictors as well as the profile of the total sample.

As shown in Table 2.1, about 60% had a prior arrest for at least one crime and almost one quarter had four or more prior arrests for any type of crime. About one-third of the sex offenders had a prior arrest for a violent crime, and 18% had a prior arrest for a sex crime. Another noteworthy characteristic of the total sample is that 20.5% could be classified as a domestic batterer. Offenders were classified as a domestic batterer if they had a prior arrest for a crime of domestic violence or an arrest for a crime of domestic violence after being placed on probation. Domestic violence crimes included domestic battery, aggravated domestic battery, and violation of an order of protection. Most of the offenders had arrests for domestic battery. Offenders who had an arrest for a domestic violence crime battery were coded as 1 and all others were coded as 0. Of the sex offenders classified as domestic batterers, 60.1% had sexually assaulted or abused strangers. Furthermore, 60% of the sex offenders in the total sample had sexually assaulted or abused strangers and 22% had assaulted a family member. A little over half of the sample had penetrated the victim either orally, vaginally, or anally, and slightly over half had sexually assaulted a person aged 13 or older. One quarter of the sex offenders had used physical force in the commission of the sex crime.

Table 2.2 presents the sexual deviancy, mental health, treatment, and substance abuse characteristics that were used as predictors of sexual and violent recidivism. A little over one-third of the sample had a current diagnosis of a mental illness that did not include only personality disorders, and one-quarter had prior mental health treatment. About 10% had an objective sexual preference for children, which was measured using the standardized test from the ABEL. Objective sexual preference refers to sexual arousal toward children that are 12 years of age or younger; sexual arousal toward adolescents is considered normal and experienced by the majority of men in American society. About 20% had

Table 2.1. Criminal History and Offense Predictors of Sexual and Violent Recidivism for Total Sample

Predictors	Total Sample N = 946
<b>Prior Criminal History Measures</b>	
One or more prior arrests for any crimes	59.9%
Four or more prior arrests for any crimes	22.7%
One or more prior arrests for sex crimes	18.1%
One or more prior arrests for violent crimes	31.0%
One or more prior arrests for felony property	23.8%
One or more prior arrests for drug crimes	10.3%
One or more prior arrests for other misdemeanors	36.9%
One or more prior convictions	21.3%
One or more prior probation sentences	19.3%
One or more prior incarcerations	12.0%
Four or more prior sentencing dates	7.4%
Offender has an arrest for a crime of domestic violence	20.5%
<b>Offense Characteristics</b>	
Five or more counts on original indictment	24.5%
One or more counts of sex crime against a family member	22.0%
One or more counts of sex crimes against an adolescent	24.3%
One or more counts of aggravated criminal sexual assault	17.3%
One or more counts of unlawful restraint	11.9%
Force used to commit the crime	24.7%
Penetration occurred	54.4%
Anal penetration occurred	15.1%
Multiple victims	28.9%
Age of youngest victim 13 or older	53.5%
Age of youngest victim 9 or younger	28.1%
Victim was a boy	15.7%
Offender was a family member (incest)	22.0%
Other relative	15.6%
Acquaintance	1.5%
Stranger	60.3%

committed or self-reported fantasizing about hands-off sexual offending such as voyeurism or exhibitionism. Using the ABEL, about 9.7% had objective sexual preference for sadistic sex crimes. Based on the MMPI or the MCMI, 9.7% of offenders could be classified as psychopathic with minors or the victim also was coded, which was not a condition in 73.2% of the cases (coded as deviants; however, one-third of the offenders did not have information on this variable. Offenders who were missing information were coded as 0 along with those who were definitively not psychopathic deviants because preliminary analysis indicated that they were similar to the non-psychopathic deviant group. About one-quarter of the sample admitted to using drugs or alcohol before committing the sex crime. About half of the sex offenders reported using illicit drugs at the time of the probation intake interview, and 59% reported alcohol use.

There were three variables that measured offenders' compliance with sex offender treatment. The responsiveness to treatment was based on a combination of treatment providers' ratings that were submitted with permission of the offenders monthly or based on probation. Some of the offenders classified as responsive by treatment providers' ratings did have a Violation of Probation Petition (VOP) for noncompliance and then became cooperative with treatment. Of the total sample, 17.7% were not mandated to participate in sex offender treatment. In addition to treatment variables, there were two other dynamic predictors: the number of missed scheduled office visits indicated in the Violation of Probation Petition (VOP) and the number of VOP for curfew violations. The number of missed scheduled office visits ranged from 0 to 18 with 83.7% having no missed scheduled office visits (mean = 1.34; stddev = 2.96). For the number of VOP where curfew violations were indicated, 4% of the sex offenders had a curfew violation.

Some characteristics of their probation supervision were also used as predictors. Whether the probation was specialized sex offender probation (42.7%) or standard probation (57.3%) was included. The number of months that offenders were ordered to serve a jail sentence also was coded,

Table 2.2. Mental Health, Substance Use, Sexual Deviancy, and Treatment Predictors of Sexual and Violent Recidivism

<b>Mental Health and Sexual Preferences</b>	Total Sample (N=846) Valid Percent	Percentage Missing
Current mental health problems	37.9%	1.8%
Prior mental health treatment	18.2%	17.9%
Objective Sexual preference for children	17.8%	26.4%
Committed or fantasized about hands-off sexual offending	25.3%	0%
Sadistic sexual preference	9.7%	26.4%
Psychopathic Deviant	4.7%	33.4%
<b>Current alcohol/drug use</b>		
Used alcohol at probation intake	59.1%	2.2%
Used illicit drugs at probation intake	47.6%	3.1%
Used drugs or alcohol before the sex crime	26.5%	12.6%
Court recommended substance abuse treatment	18.4%	1.1%
Prior substance abuse treatment	19.7%	8.4%
<b>Treatment Compliance</b>		
Responsiveness to treatment		0%
Unresponsive based on providers' ratings	10.9%	
Unresponsive based on probation data	24.2%	
Responsive based on providers' ratings	6.0%	
Unresponsive based on probation data	41.2%	
Treatment was not ordered	17.7%	
One VOP for noncompliance with treatment	34.2%	
<b>Completion of Treatment</b>		
Satisfactory completion	62.2%	
Unsatisfactory completion	37.8%	

with 70.1% not required to serve jail-time and 7.4% required to serve between 6 to 9 months in jail (mean = 1.37). Whether the court ordered the offender to refrain from contact (0), 11.8% were allowed only supervised contact (coded as 1), and 15% were not allowed supervised or unsupervised contact (coded as 2). The court ordered curfew for 11% of the offenders (coded as 1), and 89% did not have a mandated curfew (coded as 0).

### *Sampling of Sex Offenders Released from Prison*

A sample of 1511 cases of all sex offenders released from prison for a sex crime between 1997 and 2000 was obtained from the Illinois Department of Corrections (IDOC). This sample consisted of all male sex offenders who were sentenced to prison for aggravated criminal sexual assault, criminal sexual assault, aggravated criminal sexual abuse, or pornography who committed their offense within one of the four counties from which the probation data were obtained. Cases of aggravated criminal sexual assault were included because the probation sample contained a significant proportion of cases that were originally charged with aggravated criminal sexual assault, but plead guilty to a lesser charge. Due to the nature of our IDOC data, the rate of sexual recidivism for sex offenders released from prison is artificially lower than the actual rate. The IDOC data did not contain many cases whose parole was violated for committing a sex offense. Moreover, excluded from our sample were sex offenders who received civil commitments as sexually dangerous persons after they had served their prison term, and this will effectively remove many of the sex offenders who have long criminal histories of sexual offending. To control for differences in how police and prosecutors deal with sex offenses across counties, the prison sample was limited to those offenders who are released to the four counties from which our sample of sex offenders on probation were drawn. The majority of offenders came from the large metropolitan County that included Chicago.

From this sample, the prisons within a reasonable distance of Chicago were selected and all eligible cases. Once a prison was selected all case files in our sample were coded from this prison and an attempt was made to find the location of any missing casefiles and code those cases at the prison where the offender was transferred. Four research assistants were trained and supervised to code data from the prison files. Initial checks on the reliability of the coding indicated that all research assistants were reliably coding the data. The coding did not require judgment calls, but rather transferring information in the prison file to the codesheets. Data were coded from nine prisons, and a total of 408 cases were coded. However, of these 408 coded cases, 50 were removed from the final dataset because the sex offenders were deported out of the country once released from prison. The final sample of coded cases, thus, consisted of 358 cases. Of these 358 cases, the distribution across prisons was as follows: 13.7% from Dixon (N = 49); 13.7% from Hill (N = 49), 10.9% from Illinois River (N = 39); 10.3% from Lincoln (37); 15.6% from Sheridan (N = 56); 0.8% from Stateville (N = 3); 24% from Taylorville (N = 86); 8.7% from Western Illinois (N = 31); and 0.8% from Joliet (N = 3). Of these 358 cases, IDOC classified 79.6% as child sex offenders, 12.0% as habitual child sex offenders, and 3.7% as guilty but mentally ill. Of these 358 cases, 56% were sentenced to prison for aggravated criminal sexual assault, 21.3% for aggravated criminal sexual abuse, 18.8% for criminal sexual assault, 3.7% for other sex crimes, and .3% for pornography. Based on IDOC classification, 61.6% were convicted of a class X felony, 19.9% were convicted of a class 1 felony, 16.2% were convicted of a class 2 felony, and 1.4% were convicted of a class 3 or 4 felony. Of this sample, 19.7% did not penetrate the victim, 42.9% committed vaginal penetration, 21.2% committed oral or oral and vaginal penetration, and 16.2% committed anal penetration only or in combination with other forms of penetration. Based on the STATIC-99, 31.8% were low risk of sexual recidivism, 55% were classified as medium risk, 11.2% were classified as medium-high risk, and 2% were classified as high risk. On the STATIC-02, the sample had an average score of 4.68 (median = 5; sd = 1.70) with 15.6% coded as 7, 8, or 9; 17.9% coded as 6; 22.1% coded as 5, and 10.7% coded as 1 or 2.

### *Coding of Data*

All coded information came from probation department case files or prison case files, except the criminal history was coded from criminal history records, “rap sheets” obtained from the Illinois State Police and from the Federal Bureau of Investigation when FBI numbers were available. If the offender did not have any prior offenses on the rap sheets, probation files were double checked to determine if any prior offenses existed. The case files generally included an intake interview completed by the probation officer shortly after sentencing which included the offender's demographics, substance abuse and mental health status, employment status and history of prior treatment. The files also included a police report, a listing of the offender’s prior arrests and convictions, a listing of the offender’s probation conditions, and a list of all charges from the original indictment. Our coding includes whether mentally ill, sadistic or psychopathic tendencies, prior mental health treatment, whether has an objective sexual arousal to children, probation officers’ ratings’ of whether sexual deviancy is acute, chronic, or no apparent dysfunction with adult intimate partners, drug or alcohol use at the time of the sexual assault, drug use at intake, alcohol use at intake, prior substance abuse treatment, and whether substance abuse treatment was recommended by the court. The other variables were described earlier.

Prison case files consisted of a statement from the state’s attorney describing the offense, the intake interview at the time of prison admission, all disciplinary actions for noncompliance with rules. From the disciplinary forms, the total number of disciplinary actions taken, the number of disciplinary actions for violent offenses, and the number of disciplinary actions for weapons were coded.

### *Statistical Analysis*

To determine the significant predictors at the bi-variate level, we employed univariate optimal discriminant analysis (UniODA), which provides the maximum possible accuracy in classifying cases; it has been used in other research that predicted violent recidivism (Bennett,

Goodman, & Dutton, 2000; Stalans et al., 2004). Optimal discriminant analysis software uses an algorithm that explicitly maximizes accuracy rather than likelihood or variance, and is commercially available from the American Psychological Association (Yarnold & Soltysik, 2004). These statistical tools are exact, rather than making assumptions about the shape of the underlying data distribution, and thus are more robust than traditional statistical tools. The software, moreover, provides a validity analysis to mitigate the effects of outliers and determines whether the findings will replicate if another sample is used.

In order to determine the relative performance of each significant predictor, we used the percentage of total possible improvement in classification accuracy achieved with the predictor—above the classification accuracy achieved through chance alone. This measure is a standardized test statistic called the “effect strength for sensitivity” (ESS). ESS can range between 0 and 100, where 0 means no improvement in classification accuracy above chance, and 100 means that the predictor explains all variation (errorless classification). Assuming equal sample sizes in the groups to be discriminated, for a dichotomous variable, chance could achieve a mean sensitivity across classes of 50%, and thus this corresponds to an ESS of 0. A mean sensitivity (referring to the average of the percentage correctly classified for non-recidivists and the percentage correctly classified for recidivists) of 75% across classes lies halfway between chance and perfect performance and corresponds to an ESS of 50% in this example (Yarnold, Soltysik, and Bennett, 1997). Predictors can be ranked as weak, moderate, or strong, based on the ESS. The accuracy in classification above chance performance is considered weak when ESS is less than 25%, moderate when ESS is between 25% and 49%, and strong when ESS is 50% or higher.

Prior research has noted the importance of determining whether significant predictors will generalize to other samples and to the population or whether the significance is due to outliers or other data abnormalities. For each predictor, we conducted a jackknife validity analysis called a leave-one-out (LOO) analysis where classification for each observation is based on all data except the case being classified. LOO analysis



is particularly effective at detecting the undue influence of outliers or variations in the cut-off score on a continuous variable. Predictors are generalizable if they have the same accuracy at classifying cases (measured by ESS) in the validity analysis as in the original sample. Thus, significant predictors that will not replicate in a new data set have different ESS's in the original sample and the validity analysis. We report whether a predictor was generalizable or ungeneralizable.

CTA is a non-linear multivariate technique to determine which combination of offender and offense characteristics produce optimal accuracy at predicting recidivism. It does not make an assumption about whether predictors should combine linearly or in a non-linear fashion and therefore explicitly tests whether sub-groups of offenders have different risk factors. We use CTA (Yarnold, 1996; Yarnold & Soltysik, 2004) to identify the groups that are at low and high-risk to commit violent recidivism after probation discharge. Only generalizable statistically significant predictors were allowed to enter the model. Partitioning was stopped if there were fewer than 25 cases in a group or there were no additional statistically significant variables that entered the model. The statistical software examined all possible models and found the model that had the strongest ESS.

We performed statistical analyses to determine which predictors provided useful information to classify offenders into low, moderate, moderate high, and high-risk categories. Characteristics that accurately predict whether offenders were classified as one category (e.g., no new arrest for sex crimes) or the other category (new arrest for sex crime) of an outcome variable such as sexual recidivism beyond what accuracy can be achieved through chance are called “significant predictors.” Significance simply means that information obtained from the predictor does better than chance at accurately classifying offenders into either the no new arrests or new arrest category.<sup>1</sup> To determine the significant

---

<sup>1</sup> In order to determine whether a predictor does better than chance at predicting the outcome variable, we used standard statistical significance criteria. For all analyses statistical significance refers to the small probability of making a false claim that a predictor is related to new arrests when it actually will not predict new arrests in future samples. This is known as the Type one error rate or p.

predictors of these six outcome variables, we employed a statistical tool that provides the maximum possible accuracy in classifying cases. This tool is called optimal discriminant analysis (ODA).<sup>2</sup>

In order to determine the relative performance of each significant predictor, we used the percentage of total theoretical possible improvement in classification accuracy achieved with the predictor—above the classification accuracy that could be achieved based only on chance. This measure is a standardized test statistic called the “effect strength for sensitivity” (ESS). ESS can range between 0 and 100, where 0 means no improvement in classification accuracy above chance, and 100 means that the predictor explains all variation (errorless classification). Predictors can be ranked as weak, moderate, or strong, based on the ESS. ESS < 25% indicates that a predictor provides only weak accuracy in classification, ESS between 25% to 49% indicates moderate accuracy in classification above chance performance, and ESS equal to 50% or higher indicates strong accuracy in prediction above chance performance.

In addition to the strength of a predictor, it is important to know whether the predictor would perform at the same level of accuracy at classifying a new set of cases; predictors are generalizable if they have the same accuracy at classifying cases (measured by the ESS) in the new sample as in the original sample. Thus, significant predictors that will not replicate in a new data set have different ESS's in the original and new sample. We report whether a predictor was generalizable or ungeneralizable.<sup>3</sup> Only generalizable predictors were used to build a model.

---

The Type one error rate,  $\alpha$ , was assessed as an exact permutation probability, and for each comparison  $\alpha < .05$  was used to establish statistical significance. This probability level was chosen to maximize the power of detecting significant predictors while still maintaining a relatively low probability of making a Type one error.

<sup>2</sup> Parametric analyses were inappropriate due to non-normality and range restriction, and traditional nonparametric analyses were inappropriate due to many tied data values (Soltysik & Yarnold, 1993; Yarnold & Soltysik, in press).

<sup>3</sup> A jackknife validity analysis was used to assess how generalizable each significant predictor would be in classifying a new sample of data; the jackknife validity analysis employed was a leave-one-out (LOO) analysis where classification for each observation is based on all data except the case that is being classified.

Another factor that can affect the ability of predictors to classify accurately a new sample of data is the number of cases in each category of the outcome variable. All predictor variables reported have generalizable accuracy in classification of cases, as assessed using jackknife analysis, irrespective of the percentage of cases classified as one category of the outcome variable (e.g., new arrests).<sup>4</sup>

Finding characteristics that predict recidivism for the entire sample is an important first step, but in order to identify high-risk groups researchers must determine how to combine these significant predictors. Past research has generally assumed that significant predictors of recidivism could be combined in some linear (addition) method. Most prior studies have utilized linear statistical procedures (e.g., OLS regression, and logistic regression) to predict recidivism, which do not provide information about how to combine the significant predictors, may provide suboptimal models, and are rarely validated. We employed Classification Tree Analysis (CTA) to determine explicitly the combination of predictors that identify the clusters of offenders who are at low, moderate, moderately high, and very high risk to commit new crimes. The CTA model does not assume a linear combination and combines significant predictors to provide optimal accuracy in the identification of which patterns of variables present a higher risk.<sup>5</sup> Globally optimal CTA examines all possible models and begins the tree with the variable that produces the strongest CTA model. For each analysis, globally optimal CTA method was used. In order for the predictor to enter a model or serve as the root (initial) variable of the tree, it had to make theoretical sense (as expected from the prior literature) and have the strongest generalizable ESS.

---

<sup>4</sup> An efficiency analysis was conducted to assess how well a predictor performed over all possible base rates of the outcome variable. The outcome variable, however, could not have all cases classified in only one of the categories (e.g., all offenders are responsive and none are classified as unresponsive) (Ostrander, Weinfurt, Yarnold, & August, 1998).

<sup>5</sup> Classification Tree Analysis (CTA) has been shown to have better predictive and classification accuracy than alternative linear (logistic, discriminant analysis, stepwise OLS regression) and nonlinear (CHAID, CART) statistical classification methodologies (Stalans et al., 2004; Soltysik & Yarnold, 1993; Soltysik & Yarnold, 1994; Yarnold, 1996; Yarnold & Soltysik, 1991).

Our analyses represent a major advancement over previous studies on recidivism, treatment failure or probation outcomes in three critical ways. First, few studies have examined the predictors of outcome measures for samples of sex offenders on probation. Second, a recent meta-analysis of the predictors of recidivism for sex offenders primarily released from prison or private hospitals or from outpatient treatment clinics noted the lack of attention paid to how predictors should be combined (Hanson & Bussiere, 1998). Third, most prior research has not assessed the stability of their prediction models, or how well these models perform with samples of different percentages of treatment failures. The presented models contain only predictors that remained generalizable and stable in jackknife validity analysis.

Another critical part is to determine whether the prison sample and the probation sample have similar recidivism rates across times. Cox Proportional Hazard Survival Analysis was used to estimate differences between the prison and probation sample in recidivism rates. Survival analysis has numerous advantages over comparing simple percentages of sexual recidivism, which are described in the section on comparing outcomes of the control and grant sample.

### Chapter 3: Predicting Sexual Recidivism During and After Release From Supervision

Despite the burgeoning literature on sexual recidivism (see Hanson & Morton-Buorgon, 2005), little research has examined whether probation or parole supervision affects which subgroups of sex offenders are at a higher risk of sexual recidivism, and whether different offense and offender characteristics predict long-term sexual recidivism after offenders are released from probation or parole supervision and are living unsupervised in the community. In this chapter, analyses are presented that address the question: To what extent does supervision affect which offense and offenders' background, behavioral, mental health and sexual deviancy characteristics predict sexual recidivism? Using Univariate Optimal Data Analysis (Uni-ODA) (Yarnold & Solytisk, 2003), the significant and generalizable predictors of sexual recidivism during supervision and after release from supervision are identified. Furthermore, using classification tree analysis, the characteristics of subgroups of sex offenders who are at low, medium, and high risk of sexual recidivism are identified.

#### Univariate Analyses of Predictors of Sexual Recidivism

Based on Uni-ODA analyses, Table 3.1 contains the significant predictors of sexual recidivism during and after probation supervision for the probation sample. In the probation sample, 21% of the sex offenders were arrested or caught committing a new sex offense while under the supervision of probation officers and 10.9% were arrested for a new sex crime after release from probation supervision. Of the 173 sex offenders who committed a new sex crime while on probation supervision, 25.4% (N = 44) also committed a new sex crime after release from probation supervision. As shown in Table 3.1, many of the treatment, offense, and criminal history characteristics were significant and generalizable predictors of sexual recidivism both during supervision and after release from probation supervision. As indicated by the Effect Strength of Sensitivity (ESS), the strongest predictors of sexual recidivism during and after supervision were the dynamic measures assessing the offenders'

participation in sex offender treatment and whether the offender had an interest in “hands-off” sexual offending. Hands-off sexual offending refers to public indecency crimes, exhibitionism, and voyeurism. Offenders who were unsatisfactorily discharged from treatment or had a VOP for treatment noncompliance had a significantly higher likelihood of being arrested for a sex crime during supervision and after release from supervision. Offenders who expressed an interest or had prior hands-off sex crimes were significantly more likely to commit a sex crime during or after release from probation supervision.

Two offense characteristics were significant and generalizable predictors of sexual recidivism during and after release from probation supervision. The strongest predictor was whether the offender had another offense on the original indictment that was not a sex crime or a charge for unlawful restraint. These other offenses typically were trespassing, burglary, or resisting arrest charges. Thus, offenders who committed sex crimes that included behaviors that led to these types of charges were at a higher risk of being arrested for a new sex crime. Other research has typically not included measures from the original indictment; thus, additional research is needed to determine the robustness of this finding. Consistent with much prior research (see for a review Langton, Barbaree, Seto, Peacock, Karkins, & Hanson, 2007; Nunes, Firestone, Wexler, Jensen, & Bradford, 2007), offenders who victimized strangers or acquaintances were at a higher risk of being arrested for a new sex crime during or after release from probation supervision. Four criminal history measures were common predictors of sexual recidivism during and after release from probation supervision: (a) prior arrest for a public indecency crime; (b) prior arrest for a domestic violence crime; (c) served a prior probation sentence; and (d) two or more sentencing dates. The measure of sentencing dates is an item in the STATIC-99 and STATIC-2002 risk assessment instruments, though typically four or more sentencing dates is the cutoff to be assigned to the category of high risk of sexual recidivism. Prior history of domestic violence has not generally been assessed as a predictor of sexual recidivism.

There were some differences in the significant and generalizable predictors of sexual recidivism during supervision and sexual recidivism after supervision. Prior arrests for sex crimes, violent crimes, and misdemeanor crimes were significant and generalizable predictors of sex crimes after release from supervision, but were not significant predictors of sex crimes committed during probation supervision. Offenders who were ordered to participate in sex offender treatment had a *significantly higher* likelihood of sexual recidivism after release from supervision than did offenders who were not court-mandated to participate in sex offender treatment. This univariate finding may be due to other differences between offenders who were ordered to participate in treatment and those who were not ordered. If offenders were placed on probation for a pornography or public indecency conviction, they were significantly more likely to be arrested for a sex crime during probation supervision. For the outcome of sexual recidivism after release from probation, this offense characteristic was unstable in the leave-one-out (LOO) validity analysis, indicating it may not be a significant predictor in future research using new samples of sex offenders.

The published standardized risk assessment scales of sexual recidivism performed differently on predicting sexual recidivism during supervision and after release from supervision. The only standardized risk assessment scale that was a significant and generalizable predictor of sexual recidivism after release from probation supervision was the SACJ-Min, with the medium and high risk categories having a significantly higher likelihood of sexual recidivism after probation supervision. Offenders who were categorized as high risk on the SACJ-Min had a significantly higher likelihood of sexual recidivism while supervised on probation. The STATIC-99 and STATIC-2002 also were significant predictors of sexual recidivism during probation supervision, but were not generalizable predictors of sexual recidivism after probation supervision.

Table 3.1 Significant and Generalizable Predictors of Sexual Recidivism During and After Release From Probation Supervision

Description of attribute value predicting sexual recidivism	While on Probation Supervision		After Release from Probation Supervision	
	p-value	ESS	p-value	ESS
<b>Treatment and Probation Compliance</b>				
Unresponsive to treatment	.0001	22.96	.002	19.71
At least one VOP for treatment noncompliance	.0001	27.50 (11.5)	.0001	24.14
Unsatisfactorily discharged from treatment	.001	24.56	.0001	23.02
Court-ordered to participate in sex offender treatment	.200	3.20	.0001	15.15
<b>Offense and Criminal History</b>				
Prior acts or interest in hands-off sex crimes	.0001	23.06	.000	18.55
Victim is a stranger or acquaintance	.009	9.47	.003	16.18
Other offense on original indictment	.0001	16.48	.0001	18.83
Current Offense is Public Indecency or Pornography	.001	17.27	.001	21.17 (11.79)
Offender is a domestic batterer	.065	6.69	.0001	16.88
Prior arrests for public indecency	.0001	8.32	.0001	11.66
2 or more prior arrests for sex offenses	.002	9.80 (8.90)	.011	11.98
Prior arrests for violent offenses	.18	5.94 (-5.94)	.021	12.21
Prior arrest for a domestic violence crime	.041	4.54	.032	6.59
Prior arrest for a misdemeanor crime	.098	7.62	.001	18.89
2 or more sentencing dates	.001	5.86	.041	10.05
Served a prior probation sentence	.023	7.56	.021	10.05
<b>Risk Assessment Scales</b>				
For supervision, Static02 is 8 or higher; For after release Static-02 >6.5	.0001	21.86	.0001	27.40 (22.06)
Static-99 medium or high risk	.003	14.93	.0001	18.55 (18.28)
High risk on Sacj-min; Medium or High risk after supervision	.003	12.91	.0001	16.47
RASSOR score is 2 or higher	.008	11.01 (7.70)	.007	14.88 (13.96)



Table 3.2 presents the mental health, substance use, and probation supervision characteristics that were significant and generalizable predictors of sexual recidivism during supervision and after release from probation supervision. As shown in Table 3.2, the counties that either had polygraph testing or had surveillance officers who were out in the community and followed sex offenders without their knowledge had a higher rate of sexual recidivism both during supervision and after release from supervision. Mental health measures as well as personality measures were significant and generalizable predictors of sexual recidivism both during supervision and after release from probation supervision.

Table 3.2. Mental Health and Sexual Deviancy Attributes Predicting Sexual Recidivism During and After Probation Supervision

(p-value and ESS)

Description of attribute value predicting sexual recidivism	Sexual recidivism while on probation		Sexual recidivism after release from supervision	
	p-value	ESS	p-value	ESS
<b>Supervision predictors</b>				
Random Surveillance or polygraph testing	.007	25.45	.0001	33.89
<b>Mental Health and Sexual Deviancy</b>				
Current serious mental illness	.000	13.92	.000	13.92
Prior mental health treatment	.001	13.25	.001	13.25
Psychopathic deviant	.001	7.31	.001	7.31
Offender has interest in sadistic acts	.002	8.00	.002	8.00
<b>Substance Use</b>				
Reported Alcohol Use at Probation Intake	.0001	18.44		
Prior treatment for substance abuse	.323		.013	9.15

ESS = Effect Strength of Sensitivity; ESS in parentheses is for Effect Strength of Sensitivity in Leave-one-out analysis if different from first ESS

### Classification Tree Analysis Predicting Sexual Recidivism for Probation Sample

Globalized Classification Tree Analyses (CTA) were performed to determine how best to combine significant predictors of sexual recidivism within the probation sample. Globalized CTA tests all possible combinations to determine the model that provides the highest predictive accuracy in classifying cases. Effect Strength of Sensitivity (ESS) is the statistical measure that indicates the percentage of total possible improvement in classification accuracy achieved with the predictor—above the classification accuracy achieved through chance alone. In addition to a CTA analysis, a bootstrapped validity analysis (10,000 iterations, 50% resample) was performed for each final CTA model. From the bootstrap analysis, 95% confidence intervals for model performance indices were constructed using Tchebysheff's Theorem based on bootstrap results, in order to estimate the potential cross-generalizability of the model if it were to be applied to classify an independent random sample of subjects (Efron & Tibshirani, 1993).

Figure 3.1 presents the optimal CTA model predicting sexual recidivism while supervised on probation. Prior research (Steadman et al., 2000; Stalans et al., 2004) suggested the standard of .5 of the base rate of sexual recidivism as the cutpoint for low risk groups, and twice the baserate of violent recidivism as the cut point for high risk groups. Based on this standard and the 21.0% sexual recidivism in our sample, sexual recidivism of 10.50% and below defines the low risk groups and 42% and higher defines the very high risk group. The moderately high risk group is defined as 1.5 times the baserate or a rate between 31.5% and 41.9% (Stalans et al., 2004). Average risk is between 10.51% and 31.4%. Figure 3.1 identifies the characteristics that define low, average, moderately high, and very high risk groups; the percentages at the end of each subgroup indicate the percentage in that subgroup that committed a new sex crime while on probation. Using these percentages, practitioners can choose different cut points based on their own policies and resource availability. By following the arrows to the endpoints of groups A through I, readers and practitioners can determine in which group an individual offender belongs.

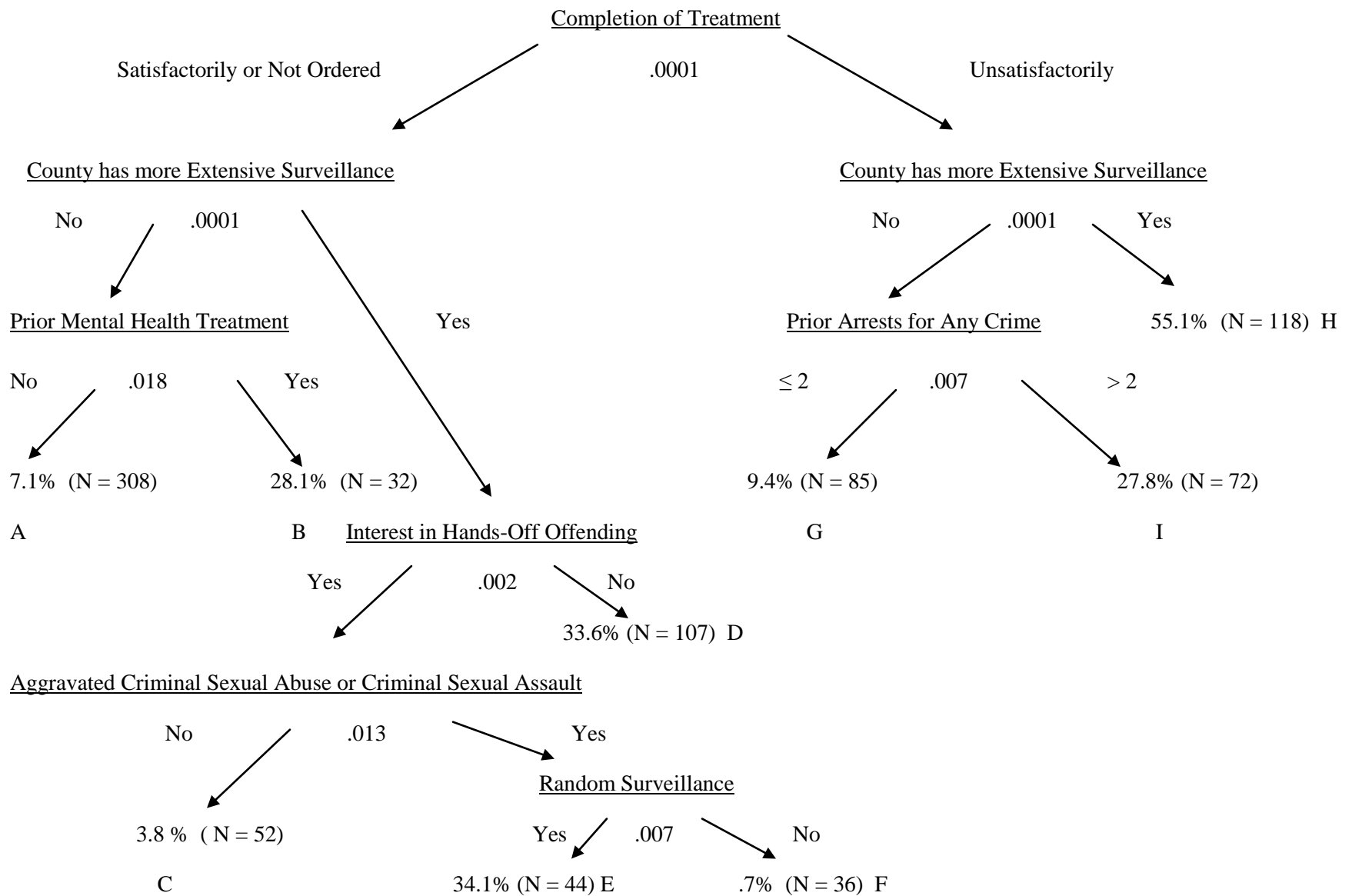


Figure 3.1. CTA Model Predicting Sexual Recidivism While on Probation (21.0% rate; ESS = 46.7%; PAC = 73.3%)

The bootstrapped results from the validity analysis indicate the amount of shrinkage that is expected if the model were applied to a new set of data. The bootstrapped 95% confidence intervals are quite small for each endpoint of the CTA tree. The largest confidence interval width is 0.5 percentage point and most endpoint bootstrapped confidence intervals are less than three tenths of one percentage point in width. The CTA model showed moderate performance with an ESS of 46.7%, and a 95% confidence interval for the ESS of 46.68% to 46.87%. The model accurately classified 73.3% of the cases, and correctly classified 66.17% of the non-recidivists (specificity) and 80.56% of the recidivists (sensitivity), with validity analysis showing a confidence interval that was less than 3 tenths of one percentage point. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

Figure 3.1 presents the globalized CTA model predicting sexual recidivism while sex offenders were supervised on probation. As shown in Figure 3.1, there was one subgroup of sex offenders in the probation sample that were at a very high risk of sexual recidivism; the subgroup labeled H had a recidivism for any type of sex crime including public indecency charges of 55%. This very high risk group was defined as those who were discharged unsatisfactorily from sex offender treatment and were supervised in a county that had random surveillance of sex offenders while they were in the community or required sex offenders to participate in polygraph testing. Figure 1 also shows the two subgroups labeled D and E that were at a moderately high risk of sex recidivism while on probation supervision. Both subgroups of sex offenders had a moderately high risk of committing a new sex crime while under probation supervision, had satisfactorily completed sex offender treatment and were supervised in a department with random community surveillance or polygraph testing; of this group, one had an interest in hands off sexual offending and the other moderately high risk subgroup had no interest in hands off sexual offending, were placed on probation for criminal sexual assault or aggravated criminal sexual abuse and were supervised in a department that had surveillance officers who randomly followed sex offenders in the community.

Figure 3.2 presents the CTA model predicting sexual recidivism after release from probation supervision. The bootstrapped 95% confidence intervals are quite small for each endpoint of the CTA tree. The largest confidence interval width is 0.7 percentage point and most endpoint bootstrapped confidence intervals are less than five tenths of one percentage point in width. The CTA model showed moderate performance with an ESS of 42.9%, and an overall percentage accurately classified (PAC) of 73%. The model accurately classified 64.8% of the non-recidivists (specificity) and 78.0% of the recidivists (sensitivity), with validity analysis showing a confidence interval that was less than 3 tenths of one percentage point. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

As shown in Figure 3.2, the model begins with the standardized risk assessment score from the STATIC-2002. The base rate of sexual recidivism after release from probation was 10.9%; therefore, low risk was defined as 5.5% and below, moderately high risk was 16.4% to 21.7% and very high risk was 21.8% and higher. As shown in Figure 2, there was one very high risk group: sex offenders who scored 7 or higher on the STATIC-2002, did not satisfactorily complete sex offender treatment, and were supervised in counties with random surveillance. For sex offenders who scored 6 or lower on the Static-2002, if they missed .88 scheduled office visits per month with their probation officer they were at a moderately high risk of sexual recidivism, but if they missed less than .88 scheduled office visits per month they were at a low risk with only 3.61% committing a new sex offense after release from probation. Thus, the dynamic variable of missed schedule office visits added information to the STATIC-2002 score to increase its predictive accuracy in classifying cases who committed sexual recidivism after release from probation. Sex offenders who scored 7 or higher on the STATIC-2002 and satisfactorily completed sex offender treatment or were not ordered to participate in sex offender treatment were at a low risk of sexual recidivism if they had no prior arrests for any crime (5.98% recidivism rate) and were at an average risk of sexual recidivism if they had one or more prior arrests for any crime (15.38% recidivism rate).

Figure 3.2. CTA Model Predicting Sexual Recidivism After Release From Probation

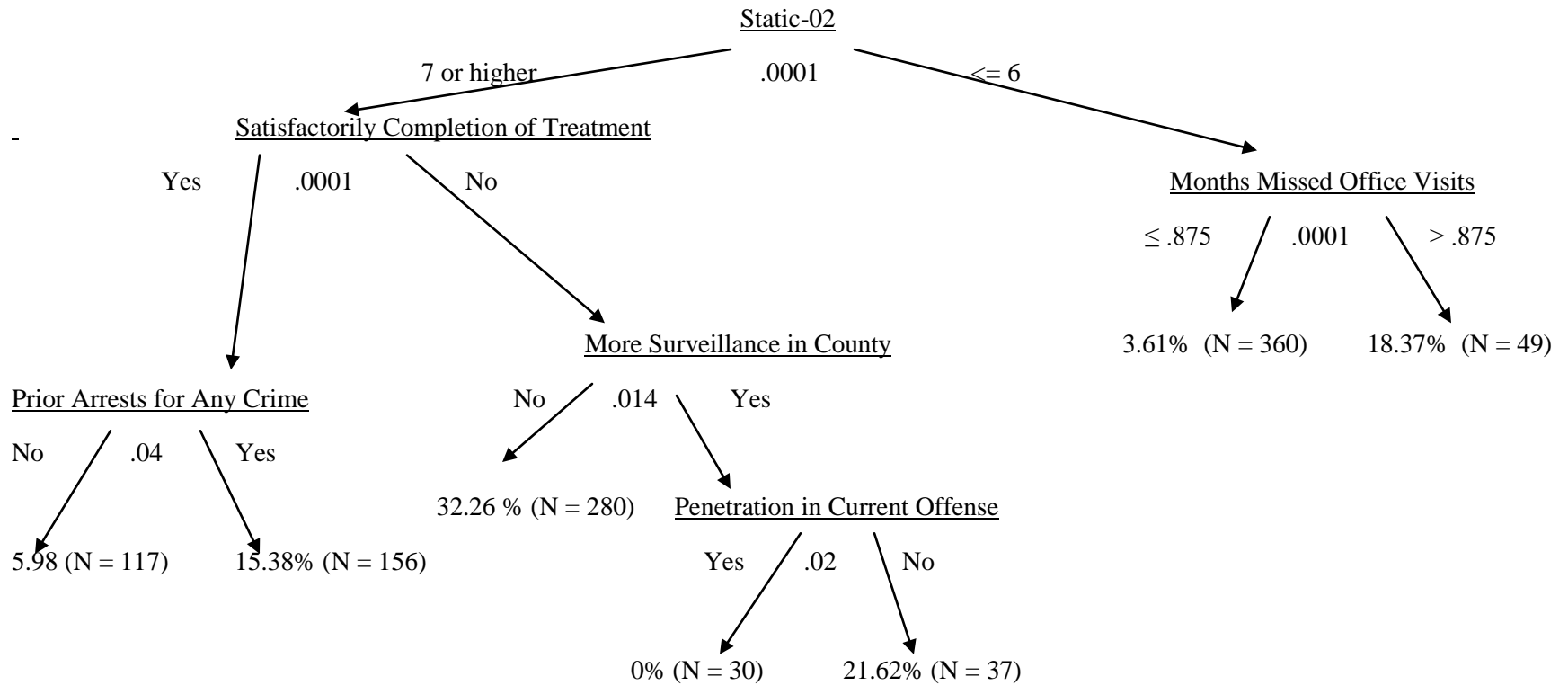
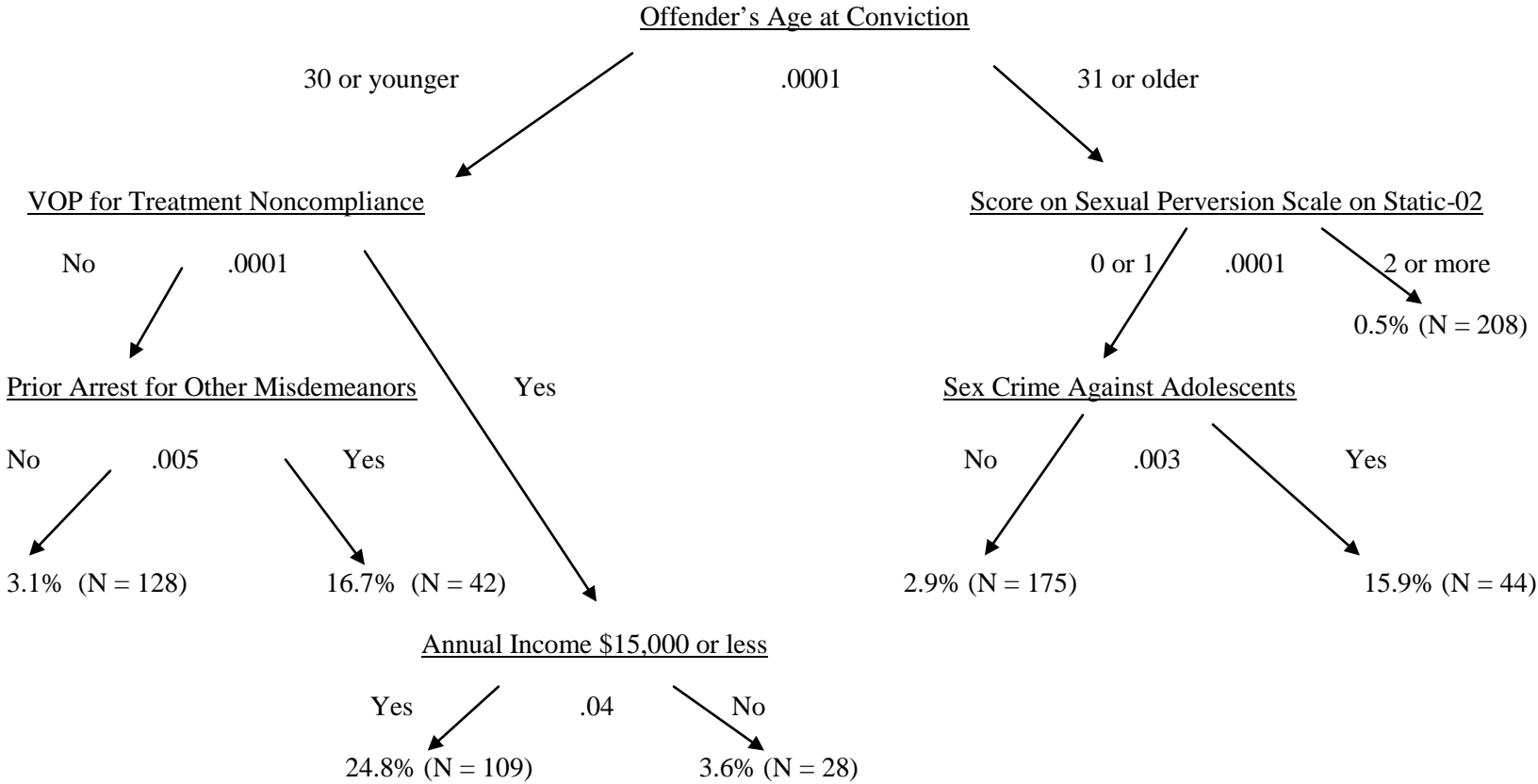


Figure 3.3 presents the CTA model predicting a new arrest for a serious sex crime after release from probation. A serious sex crime was defined as aggravated criminal sexual assault, criminal sexual assault, aggravated criminal sexual abuse or pornography. In the probation sample, the rate of serious sex crimes was 7.3%. The CTA model showed strong performance accounting for 56.27% improvement in classification accuracy over what could be achieved by chance alone, with a 95% confidence interval for ESS from the bootstrapped validity ranging from 56.23% and 56.57%. The classification accuracy also was quite balanced with the model correctly classifying 77.42% of the offenders who were not arrested for a serious sex crime after release from probation and 78.85% of the sex offenders who were arrested for a serious sex crime after probation. The model had an overall PAC of 77.5% with a 95% confidence interval from the bootstrapped validity analysis of 77.49% to 77.58%. The bootstrapped 95% confidence intervals are quite small for each endpoint of the CTA tree. The largest confidence interval width is four-tenths of one percentage point and most endpoint bootstrapped confidence intervals are less than two tenths of one percentage point in width. The CTA model showed moderate performance with an ESS of 46.7%, and a 95% confidence interval for the ESS of 46.68% to 46.87%. The model accurately classified 73.3% of the cases, and correctly classified 66.17% of the non-recidivists (specificity) and 80.56% of the recidivists (sensitivity), with validity analysis showing a confidence interval that was less than 3 tenths of one percentage point. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

Based on the base rate of serious sexual recidivism after release from probation of 7.4%, the low risk is 3.7%, and the very high risk group is defined as having a recidivism rate of 14.8% or higher. As shown in Figure 3, there are three low risk subgroups and three very high risk subgroups. The model begins with the offender's age at the time of conviction.

Figure 3.3. CTA Model Predicting Serious Sexual Recidivism After Release from Supervision for Probation Data





There are two very high risk subgroups that are 30 years of age or younger. One group of 30 or younger sex offenders at very high risk has no violation of probation petitions (VOP) for treatment noncompliance, but has at least one arrest for a miscellaneous offense. Miscellaneous offenses included primarily disorderly conduct and resisting arrest of a police officer. The other group of 30 or younger sex offenders at very high risk has at least one VOP for treatment noncompliance and earns less than \$15,000 annually. The other high risk subgroup was over 30 years of age, had one or more counts of sex crimes against an adolescent victim on the original indictment, and had a score on the STATIC-2002 deviant sexual perversion subscale of zero or one. This subgroup consists of sex offenders who are not sexually aroused by children, but may be opportunistic rapists or have motives of anger or violence toward women. Two subgroups of sex offenders aged 30 or younger were at a low risk of sexual recidivism: (a) those who had no prior arrests for miscellaneous offenses and no VOP for treatment noncompliance; and (b) those who earned an annual income of \$15,001 or more and at least one VOP for treatment noncompliance. Two subgroups of sex offenders aged 31 or older were at a low risk of sexual recidivism: (a) those with a score of two or higher on the STATIC-2002 sexual perversion subscale; and (b) those with a score of one or lower on the STATIC-2002 sexual perversion subscale and no counts of sex crimes against adolescents on the original indictment.

### Univariate ODA Analyses for the Prison Sample

Table 3.3 presents the predictors of sexual recidivism for the sample of prison released sex offenders. The first column of Table 3.3 describes the value of the characteristic that predicted sexual recidivism. The second and third columns of Table 3.3 describes the p-value and the ESS value for predictors of sexual recidivism while on parole supervision respectively. The fourth and fifth columns describe the p-value and ESS value for predictors of sexual recidivism after release from parole supervision. P-values that are .05 or less are considered significant, which means that knowledge of the value of the predictor improves the accuracy of classifying a case as higher risk of sexual recidivism. After release from prison and during the average time of three years on parole supervision, 4.5% of the sex offenders in the prison sample were arrested for a new sex crime. After release from parole supervision, 6% of sex offenders were arrested for a new sex crime after release from parole supervision. Only three sex offenders were arrested for sex crimes while on parole supervision and after release from parole supervision. An examination of Table 3.3 shows that there were no common predictors of sexual recidivism while on parole supervision and sexual recidivism after release from parole supervision. For predicting sexual recidivism while on parole, there were three significant and generalizable predictors. Sex offenders were at a significantly higher risk of sexual recidivism while on parole supervision if they were domestic batterers, had 2 or more convictions for any crime, and had at least one prior conviction for a sex crime. By contrast, sex offenders were at a higher risk of sexual recidivism after release from parole supervision if they reported alcohol use at the time of prison intake, had reported that they did not use drugs or alcohol within the 24 hours prior to committing the sex crime that led to their prison sentence, had two or more prior convictions for violent crimes, and had at least one charge on the original indictment for a sex crime against an adolescent victim. The significant offense risk factors were stronger predictors of sexual recidivism after release from parole supervision compared to their predictive accuracy of sexual recidivism while on parole supervision.

Conversely, whether the offender was a domestic batterer had four times the accuracy beyond chance performance for predicting sexual recidivism while on parole supervision compared to its accuracy for predicting sexual recidivism after release from parole supervision.

In examining the predictive accuracy of the standardized risk assessment scales in predicting sexual recidivism during and after release from parole supervision for the prison sample, it is clear that the scales did not perform well. No risk assessment scale predicted sexual recidivism for both during parole supervision and after release from parole supervision. The RASSOR was a significant and generalizable predictor of sexual recidivism after release from parole supervision, and showed moderate accuracy (ESS = 28.99,  $p < .018$ ), but was not a significant predictor of sexual recidivism while under the supervision of the parole department ( $p < .68$ ). In comparing the STATIC-2002, STATIC-99, and SACJ-min, the STATIC-99 was the only standardized scale that approached significance for predicting sexual recidivism after release from parole supervision (ESS = 26.03,  $p < .059$ ), but did not perform above chance level for predicting sexual recidivism while on parole supervision (ESS = 20.27,  $p < .17$ ). Given the low base rate of sexual recidivism for our prison sample, it is not surprising that the standardized scales had low (below chance performance) predictive accuracy.

Table 3.3. Predictors of Sexual Recidivism of the Prison Sample: Comparison of During and After Release from Parole Supervision

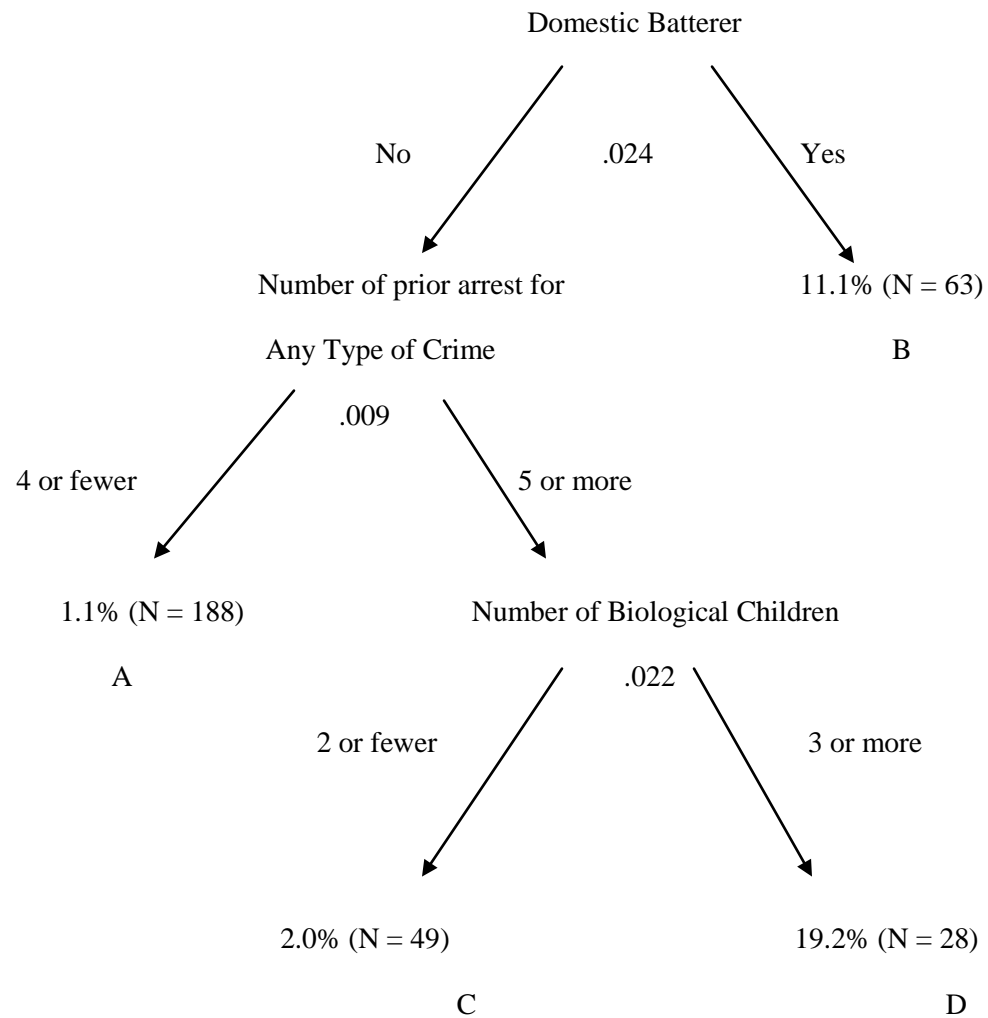
Description of attribute value predicting sexual recidivism	While on Parole Supervision		After Release from Parole Supervision	
	p-value	ESS	p-value	ESS
<b>Criminal History</b>				
2 or more convictions for any crime	.04	24.55	.16	15.85
At least one conviction for a sex crime	.05	23.01	.85	4.18
2 or more convictions for a violent crime	.096	15.77 (9.10)	.03	15.18
Is a domestic batterer	.01	28.72	.53	5.39
<b>Offense characteristics</b>				
At least one charge for a sex crime against an adolescent	1.0	3.68	.04	19.10
Did not use drugs or alcohol before the sex crime	.75	9.22	.03	31.87
Reported use of alcohol at time of prison intake	1.0	3.48	.04	22.59
<b>Risk Assessment Scales</b>				
RASSOR	.68	10.13	.018	28.00
STATIC99 Classification is High Risk	.059	26.03	.17	20.27 (12.12)
SACJ-min classification is medium or high risk	.096	24.17 (7.12)	.36	14.95
STATIC-2002	.15	23.78 (-8.91)	.57	12.65 (10.59)

### CTA Models Predicting Sexual Recidivism by Sex Offenders Released from Prison

Globalized Classification Tree Analyses (CTA) were performed to determine how best to combine significant predictors of sexual recidivism within the prison sample. Globalized CTA tests all possible combinations to determine the model that provides the highest predictive accuracy in classifying cases. In addition to a CTA analysis, a bootstrapped validity analysis (10,000 iterations, 50% resample) was performed for each final CTA model. From the bootstrap analysis, 95% confidence intervals for model performance indices were constructed using Tchebysheff's Theorem based on bootstrap results, in order to estimate the potential cross-generalizability of the model if it were to be applied to classify an independent random sample of subjects (Efron & Tibshirani, 1993).

In the prison sample, the rate of sexual recidivism while on parole was 4.5%. Figure 3.4 presents the CTA model predicting sexual recidivism while on parole for the released prison sample. The CTA model showed strong performance in predictive accuracy beyond chance with an ESS of 55.2%, and had an overall PAC of 75.5%. As shown in Figure 3.4, the model begins with whether the sex offender is also a domestic batterer. Domestic batterers are at a moderately high risk of sexual recidivism while on parole with a rate of 11.1%. The bootstrapped 95% confidence intervals are quite small for each endpoint of the CTA tree. The largest confidence interval width is four-tenths of one percentage point and most endpoint bootstrapped confidence intervals are less than two tenths of one percentage point in width. The model accurately classified 75.24% of the non-recidivists (specificity) and 80% of the recidivists (sensitivity), with validity analysis showing a confidence interval that was less than 6 tenths of one percentage point. The very high risk bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used. Figure 3.4 shows two subgroups with rates that are twice the baserate. One very high risk group, which is labeled D, and consists of sex offenders who are not domestic batterers, have 5 or more prior arrests for any crime, and 3 or more biological children. The other very high risk subgroup was domestic batterers who had a 11% sexual recidivism rate while on parole.

Figure 3.4. Model Predicting Sexual Recidivism While on Parole Supervision (Prison Sample)



CTA and bootstrapped validity analysis were performed to predict sexual recidivism after release from parole supervision for the prison sample. The two variable CTA model showed moderate performance with an ESS of 46.02% and a PAC of 78.5%. The bootstrapped 95% confidence intervals are quite small for each of the three endpoints of the CTA tree. The largest confidence interval width is for endpoint C with a 95% confidence interval of 18.01% to 18.31%. The confidence intervals for endpoints A and B are less than one-tenth of one percentage point. The model accurately classified 78.5% of the cases, and correctly classified 79.4% of the non-recidivists (specificity) and 66.7% of the recidivists (sensitivity), with validity analysis showing a confidence interval that was less than 8 tenths of one percentage point. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

The base rate of sexual recidivism after release from parole supervision was 6.0%. Figure 3.5 shows one group of sex offenders who have a rate three times higher rate of sexual recidivism after release from parole; this high risk subgroup is defined by not using alcohol or drugs before committing the sex crime and having at least one prior arrest for a property crime.

The base rate recidivism rate for serious sexual recidivism after release from parole supervision for the prison sample was 5.4%. CTA and bootstrapped analysis were performed to predict serious sexual recidivism after release from parole. The three variable CTA model showed strong performance accounting for 67.61% of predictive accuracy beyond chance performance, and accurately classifying 69% of the cases overall. The bootstrapped 95% confidence intervals are quite small for each endpoint of the CTA tree. The largest confidence interval width is three-tenths of one percentage point and two of the endpoints, A and D, had no variation accurately predicting 100% of the cases. The model correctly classified 67.6% of the non-recidivists (specificity) and 100% of the recidivists (sensitivity), with validity analysis showing a confidence interval that was less than one-tenths of one percentage point. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

Figure 3.5. Model Predicting Sexual Recidivism After Release from Parole (Prison Sample)

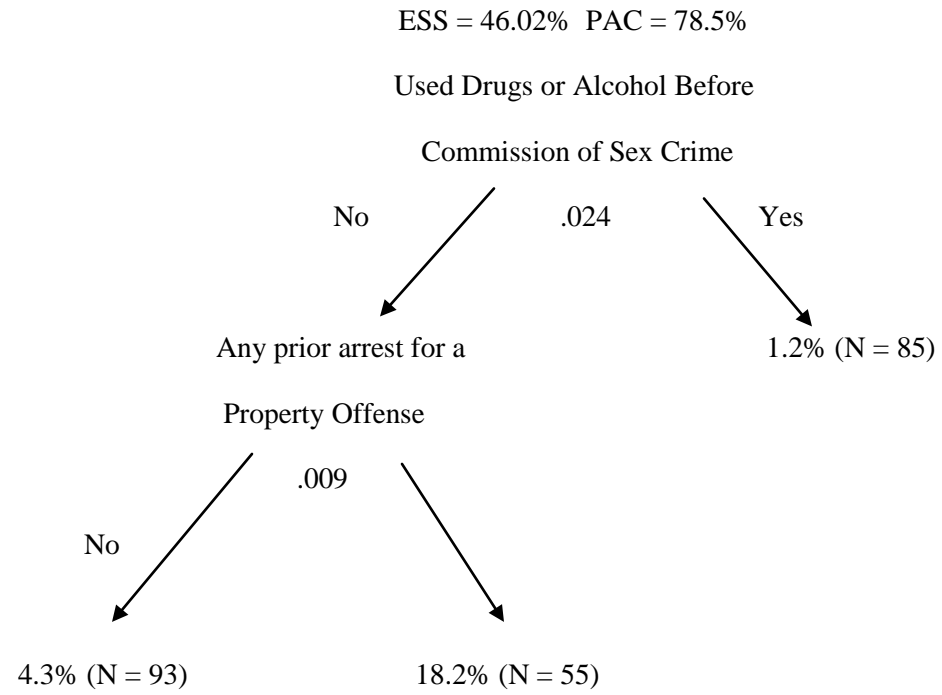
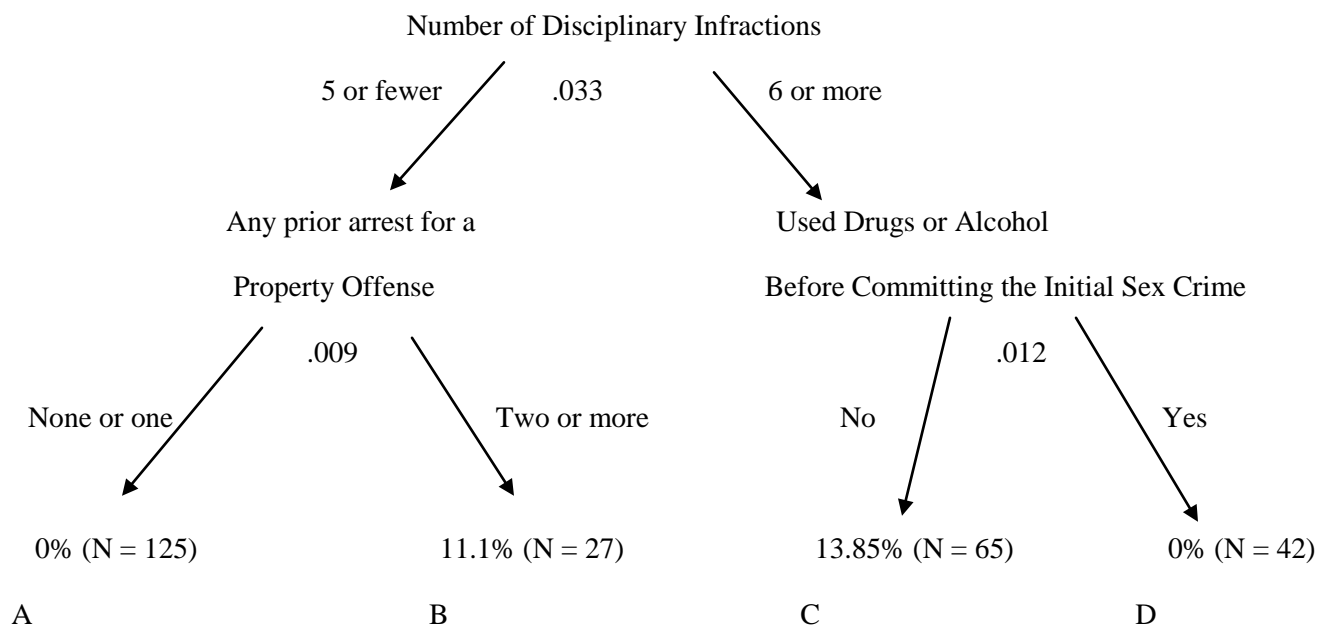




Figure 3.6 presents the CTA tree predicting serious sexual recidivism after release from parole supervision for the prison sample. As shown in Figure 3.6, there are two low risk groups and two very high risk groups. The two low risk groups had 0% recidivism rates. One low risk group had five or fewer disciplinary infractions while in prison and either none or one prior arrest for a property crime. The other low risk group had six or fewer disciplinary infractions while in prison and reported that they used alcohol or drugs within 24 hours before committing the sex crime that placed them in prison. As in the CTA predicting sexual recidivism after release from parole, one high risk group had not used drugs or alcohol within 24 hours of committing the sex crime that placed them in prison and had 6 or more disciplinary infractions while in prison. The other high risk group had five or fewer disciplinary infractions and had two or more arrests for property crimes.

Figure 3.6. Model Predicting Serious Sexual Recidivism After Release from Parole (Prison Sample)



## Conclusions

The findings reveal that there are several risk factors that were significant predictors of both sexual recidivism during probation supervision and after the probation sample was released from supervision. Sex offenders who victimized strangers or acquaintances were at a higher risk of sexual recidivism during and after release. In addition, sex offenders who commit another offense during the sex crime beyond unlawful restraint such as trespassing, burglary, resisting arrest, were at a higher risk. Consistent with its inclusion on the Static-99 and Static-2002, the number of sentencing dates also was a common significant predictor. For the probation sample, prior arrests for all sex crimes and prior arrests for violent crimes only predicted sexual recidivism after release, whereas prior arrests for public indecency crimes and domestic violence crimes were common risk factors of sexual recidivism during probation supervision and after release. None of the standardized risk assessment scales predicted both sexual recidivism during supervision and sexual recidivism after supervision.

However, for the released prison sample, there were no risk factors that predicted both sexual recidivism during parole supervision and sexual recidivism after release from parole. Two or more prior convictions, any prior conviction for a sex crime, and whether the offender also committed prior or current domestic violence crimes were risk factors predicting sexual recidivism while on parole supervision. By contrast, the only criminal history measure that predicted sexual recidivism after release from parole supervision was two or more convictions for a violent crime. The RASSOR scale also accounted for 28% of the classification accuracy beyond chance performance in sexual recidivism after release from parole, but did not significantly predict sexual recidivism while on parole supervision. Three offense characteristics were significant risk factors for sexual recidivism after release from parole, but not during parole supervision. Offenders who had a charge on their original indictment for a sex crime against an adolescent victim were significantly more likely to be arrested for a new sex crime after release from parole. Moreover,

sex offenders who reported that they did not use drugs or alcohol before committing the sex crime that placed them in prison and those that reported that they used alcohol during their intake interview for prison admission were at a significantly higher risk of sexual recidivism.

For predicting sexual recidivism after release on probation, the CTA model showed that Static-02 prediction could be improved, and its predictive accuracy varied by the other characteristics of offenders. Though typically a score of 7 or higher on the STATIC-2002 is treated as high risk, the CTA model showed that many false alarms could occur for one subgroup of sex offenders: Offenders who scored 7 or higher on the STATIC-2002 had a low rate of sexual recidivism (6%) if they had no prior arrests for any crime and satisfactorily completed treatment. Offenders with a score of 7 or higher on the STATIC-2002 were at high risk if they were supervised in a county with random surveillance or polygraph testing and were unsatisfactorily terminated or dropped out of treatment. Thus, satisfactorily completing treatment moderated the predictive accuracy of the STATIC-2002 scale. Moreover, offenders who scored six or lower on the STATIC-2002 scale had a moderately high chance of sexual recidivism after release from probation (18.4%) if they missed an average of at least .88 office visits per month during their probation supervision. Thus, the dynamic variable of missed office visits improved the classification accuracy of the STATIC-2002 scale.

For the probation sample, two dynamic variables were important defining risk factors: satisfactory or unsatisfactory completion of treatment and number of missed office visits. Similarly, behavior during prison also was an informative risk factor. For the prison sample, the dynamic variable of number of disciplinary infractions during prison started the CTA model predicting serious sexual recidivism after release from parole supervision. Of sex offenders who had six or more disciplinary infractions during prison, they were at a high risk of serious sexual recidivism after release from parole if they did not report using drugs or alcohol before committing the sex crime that placed them in prison and were at a low risk of serious sexual recidivism if they reported using drugs or alcohol before committing the sex crime. Offenders who report or use drugs or alcohol before committing the sex crime are less likely to see the sex crime as appropriate and use the alcohol or drugs to neutralize

their guilt or to deflect some blameworthiness from their moral character. Also, sex offenders with two or more prior arrests for property crimes and with five or fewer disciplinary infractions during prison were at a higher risk of sexual recidivism. Thus, disciplinary infractions modified the predictive accuracy of the variable using alcohol or drugs before the sex crime and modified the predictive accuracy of the risk factor, prior arrests for property crimes.

## Chapter 4: Predicting Violent Recidivism of Sex Offenders

### Univariate Analyses of Predictors of Violent Recidivism

Table 4.1 presents the Uni-ODA analyses predicting violent recidivism while supervised on probation and after release from probation supervision. As shown in Table 4.1, the ESS for most significant predictors ranged between 14% and 24%, which indicates weak classification accuracy. Measures of treatment noncompliance were significant and generalizable predictors of violent recidivism while on supervision and after release from probation supervision. Missing scheduled office visits was a significant and generalizable predictor of violent recidivism after release from supervision, but was not a stable predictor of violent recidivism while on supervision as indicated by the different ESS in the LOO validity analysis. Prior arrest for any violent crime was the strongest predictor of the criminal history measures both for violent recidivism while on probation supervision and after release from probation supervision. Offenders who were never married or self-reported use of illicit drugs at the time of probation intake were significantly more likely to be arrested for a violent crime while on probation supervision and after release from probation supervision.

The Static-99 and RASSOR standardized risk assessment scales did not predict sex offenders' violent recidivism while on probation supervision or after release from probation supervision. The Static-2002 was a significant predictor, but was not generalizable and thus will probably not replicate when new data are analyzed. The only risk assessment scale that was significant and generalizable for violent recidivism while on supervision and after release from probation supervision was the SACJ-min. Sex offenders classified as high risk on the SACJ-min had a significantly higher chance of having a new arrest for a violent crime while on probation supervision and after release from probation supervision.

Table 4.1. Common Significant and Generalizable Predictors of Violent Recidivism During and After Release from Probation Supervision

(p-value, ESS)

Description of attribute value predicting sexual recidivism	While on Probation Supervision		After Release from Probation Supervision	
	p-value	ESS	p-value	ESS
<b>Treatment and Probation Compliance</b>				
Unresponsive to treatment	.028	14.43	.0001	19.83
At least one VOP for treatment noncompliance	.005	19.03	.0001	19.25
Unsatisfactorily discharged from treatment	.003	18.18	.0001	22.41
Missed at least one week of scheduled office appointments	.001	14.28 (13.25)	.0001	13.98
<b>Offense and Criminal History</b>				
3 or more prior arrests for any crime	.0001	24.29	.0001	18.10 (16.71)
Prior arrest for a property crime	.001	14.34	.0001	19.79
Prior arrest for a drug crime	.0001	14.02	.005	8.48
Prior arrest for a violent crime	.0001	24.29	.0001	17.04
Prior arrest for a misdemeanor crime	.0001	15.66 (15.32)	.003	15.48
<b>Background Characteristics</b>				
Never married	.003	18.15	.0001	26.66
Using Illicit Drugs at time of probation intake	.047	11.36	.0001	17.36
<b>Risk Assessment Scales</b>				
Static-02 Score is greater than 6.5	.002	17.01 (5.81)	.0001	18.83 (17.76)
High risk on Sacj-min	.005	14.43	.02	14.25

In addition to the common significant predictors of violent recidivism during supervision and after release from supervision, there were several significant predictors of violent recidivism after release from probation supervision that were not significant predictors of violent recidivism during probation supervision. Table 4.2 presents the unique significant and generalizable predictors of violent recidivism after release from probation supervision. The strongest unique significant predictor was employment status: Unemployed sex offenders had a significantly higher likelihood of violent recidivism after release from probation supervision than did employed sex offenders. The STATIC-99 and RASSOR were significant and generalizable predictors of violent recidivism after release from probation supervision. Sex offenders classified as medium or high risk on the STATIC-99 had a higher likelihood of being arrested for a new violent crime during the period after release from probation supervision. Sex offenders with a score of 2 or higher on the RASSOR also had a higher likelihood of being arrested for a violent crime. Individuals who were court-ordered to participate in substance abuse treatment during probation supervision or had previously participated in substance abuse treatment were significantly more likely to have an arrest for a violent crime after release from probation supervision. Sex offenders who admitted to using alcohol or drugs within the preceding 24 hours before committing the sex crime that placed them on probation were at a higher risk of being arrested for a violent crime after release from probation supervision. Three other characteristics were significant and generalizable predictors, but were very weak predictors accounting for between 5 and 9% of the accuracy in classification: (a) sex crime involved penetration; (b) prior arrest for a domestic violence crime; and (c) objective sexual arousal to children. Given the weak accuracy of these predictors, they have very little practical significance in understanding the risk of sex offenders' violent recidivism after release from supervision.

For violent recidivism while on probation, there was only one unique predictor. Gang members had a significantly higher chance of being arrested for a violent crime while on probation than did sex offenders who were not members of a gang, (ESS = 8.49,  $p < .0001$ ).

Table 4.2. Unique Significant and Generalizable Predictors of Violent Recidivism After Release from Probation Supervision

Description of attribute value predicting sexual recidivism	After Release from Probation Supervision	
	p-value	ESS
<b>Treatment and Probation Compliance</b>		
Court-ordered to participate in substance abuse treatment	.001	12.69
Prior substance abuse treatment	.004	12.25
Had one or more VOP for curfew violation	.015	5.00
<b>Offense and Criminal History</b>		
Sex crime involved penetration	.037	11.99
Prior arrests for domestic violence	.003	7.83
<b>Background Characteristics</b>		
Unemployed at time of probation intake	.0001	19.78
Objective Sexual attraction to children	.049	8.98
Used alcohol or drugs prior to committing sex crimes	.003	12.82
<b>Risk Assessment Scales</b>		
Static-99 medium or high risk	.001	16.61
RASSOR score is 2 or higher	.012	11.31



Uni-ODA was performed to assess the significant and generalizable predictors of violent recidivism during parole supervision and after release from parole supervision for the sample of sex offenders released from prison. Table 4.3 presents the significant and generalizable predictors. The second column presents the predictors of violent recidivism during parole supervision, and the third column presents the predictors of violent recidivism after release from parole supervision. For violent recidivism after release from parole supervision, only three variables were significant and generalizable: (a) gang member; (b) race; and (c) prior arrests for domestic violence crimes. Sex offenders released from prison were at a higher risk of violent recidivism after release from parole if they were gang members, African-American, or had prior arrests for domestic violent crimes. Gang membership and African-American race also increased the risk of being arrested for a violent crime while on parole supervision. In addition, disciplinary infractions for violent behavior, sexual behavior, or possession of a weapon increased the risk of violent recidivism while on parole supervision. Two measures of prior incarcerations significantly predicted violent recidivism while on parole supervision. Consistent with prior research, prior arrests for violent offense significantly predicted violent recidivism while on parole supervision and prior arrests for domestic violence significantly predicted violent recidivism after release from parole supervision.

Table 4.3 Significant and Generalizable Predictors of Violent Recidivism During Parole Supervision and After release from Parole Supervision for the Prison Sample (p-value, ESS)

Description of attribute value predicting sexual recidivism	During Parole Supervision Violent Recidivism		After Release from Parole Supervision Violent Recidivism	
	p-value	ESS	p-value	ESS
<b>Disciplinary Infractions</b>				
One or more for violent behavior	.001	41.19		
One or more for sexual behavior	.001	23.16		
One or more for possession of a weapon	.001	21.45		
<b>Criminal History</b>				
One or more incarceration for a non-sexual felony	.029	25.40		
Two or more prior incarcerations	.005	23.74		
One or more prior convictions for a violent crime	.05	15.37		
Prior arrest for domestic violence			.026	9.94
<b>Background Characteristics</b>				
Gang member	.04	19.81	.01	18.66
African-American	.017	30.36	.0001	34.32
Interest or prior arrests for hands off sex crimes	.04	13.30		
<b>Risk Assessments</b>				
Static99 > 2.5	.005	31.45		
Static-99 medium or high risk	.008	27.80 (13.42)	.06	13.90 (.01)

### CTA Model Predicting Violent Recidivism for the Probation Sample

CTA and bootstrapped analyses were performed to predict violent recidivism while on probation supervision. A bootstrapped validity analysis (10,000 iterations, 50% resample) was performed for each final CTA model. From the bootstrap analysis, 95% confidence intervals for model performance indices were constructed using Tchebysheff's Theorem based on bootstrap results in order to estimate the potential cross-generalizability of the model if it were to be applied to classify an independent random sample of subjects (Efron & Tibshirani, 1993).

The baserate for violent recidivism while on probation supervision was 11.4%. The nine variable CTA model showed moderate performance with an ESS of 45.7% and a PAC of 77.7%. The bootstrapped results from the validity analysis indicate the amount of shrinkage that is expected if the model were applied to a new set of data. The bootstrapped 95% confidence intervals are quite small for each endpoint of the CTA tree. The largest confidence interval width is 0.5 percentage point and most endpoint bootstrapped confidence intervals are less than five tenths of one percentage point in width. The model accurately classified 79.0% of the non-recidivists (specificity) and 66.7% of the recidivists (sensitivity), with validity analysis showing a confidence interval that was less than 3 tenths of one percentage point. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

Based on prior research (Steadman et al., 2000; Stalans et al., 2004), low risk subgroups were defined as .5 of the baserate of 11.4 or 5.7 or below. Figure 4.1 shows two subgroups, labeled A and B, that are at a low risk of violent recidivism while on probation supervision. Both low risk groups had no VOP for noncompliance with treatment and no prior arrests for violent crime; with these characteristics, sex offenders who were currently married were at a low risk of violent recidivism, and sex offenders who were separated, divorced, or single, and did not have a court order while on probation to have no contact with their victim.

Figure 4.1 CTA Model Predicting Violent Recidivism While on Probation Supervision

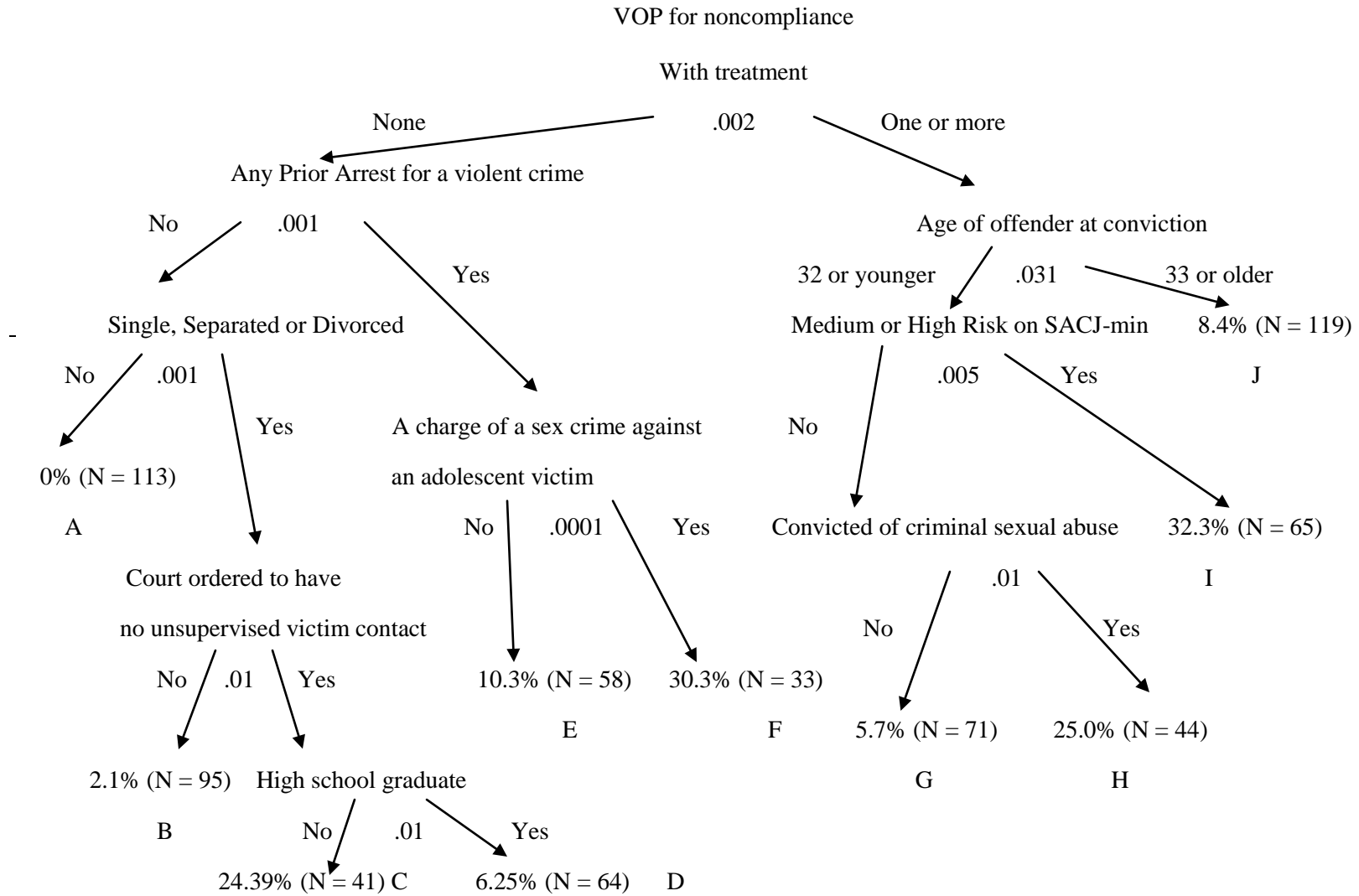
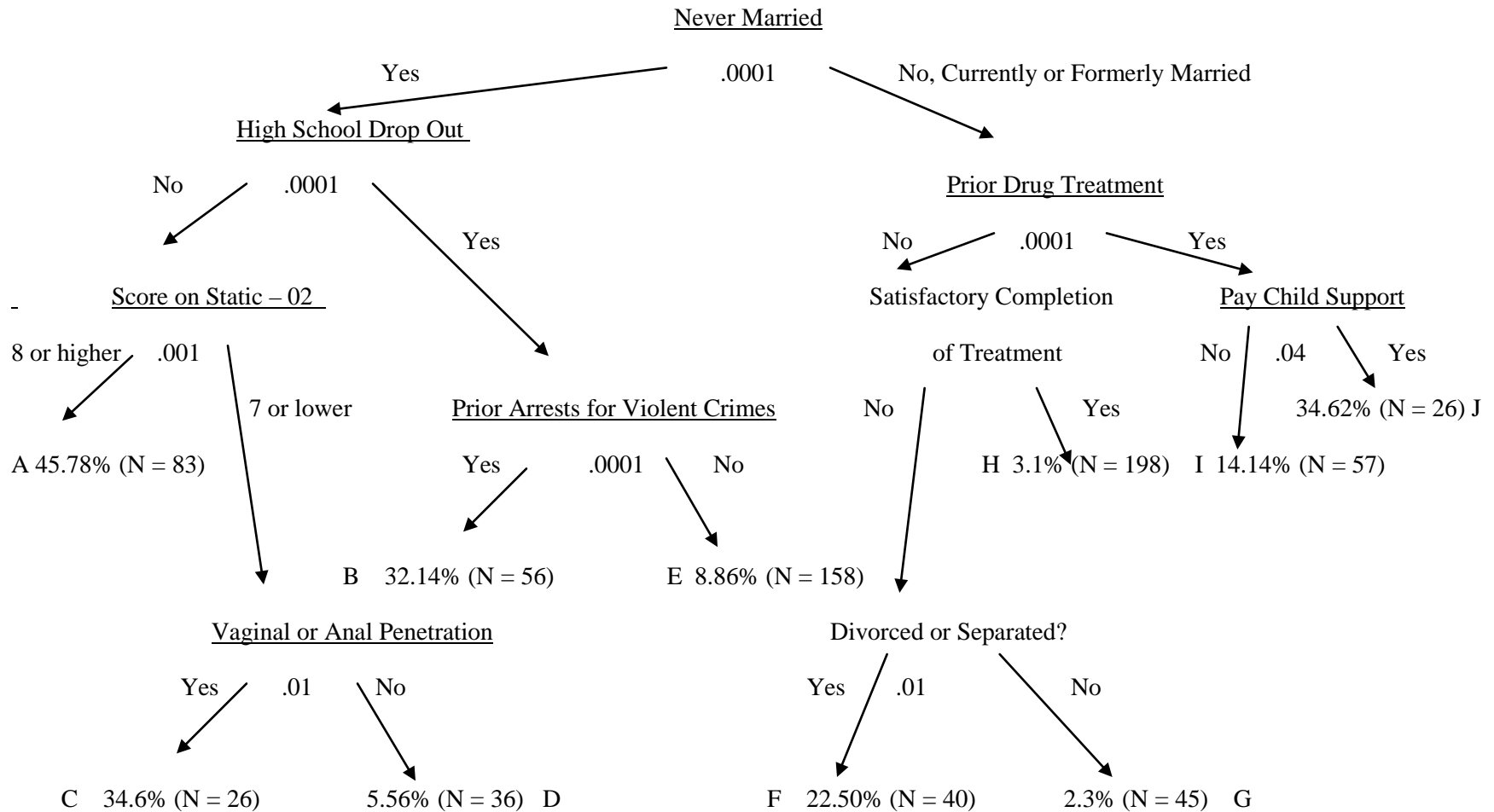


Figure 4.1 also shows four subgroups of sex offenders who were at a very high risk of sexual recidivism while on probation. A very high risk was defined as twice the base rate of 11.4% or 22.8% rate or higher. As shown in Figure 4.1, two of the high risk subgroups had a VOP for treatment noncompliance and two of the very high risk subgroups did not have any VOPs for treatment noncompliance. Sex offenders who were 32 years of age or younger and had one or more VOP for treatment noncompliance were at a very high risk of committing a sex crime while on probation if they were scored as medium or high risk on the SACJ-min or were scored as low risk on the SACJ-min and were on probation for the misdemeanor crime of criminal sexual abuse. Sex offenders convicted of criminal sexual abuse were originally charged with more serious felony sex crimes; however, due to evidence or other circumstances, the offenders were able to obtain a plea negotiation of a misdemeanor of criminal sexual abuse. Thus, these sex offenders learned from their experience that the system was lenient and were not deterred. Sex offenders who were compliant with sex offender treatment were at a very high risk of sexual recidivism if they were in one of the following categories: (a) had a prior arrest for a violent crime and were charged with a sex crime against an adolescent victim; and (b) high school dropouts who were single, divorced or separated and were ordered to have no contact with the victim and did not have any prior arrests for violent crimes.

Figure 4.2 presents the CTA model predicting violent recidivism after release from probation supervision. The seven variable CTA model showed moderate performance with 45.44% increase in predictive accuracy beyond chance performance, and an overall classification accuracy of 79.3%. The CTA model accurately predicted 82.19% of the non-recidivists (specificity) and 63.25% of the recidivists (sensitivity), with bootstrapped analysis showing a confidence interval that was less than four-tenths of one percentage point. The confidence intervals for the endpoints of the CTA tree were quite small, with the largest interval of five-tenths of one percentage point.

Figure 4.2. CTA Model Predicting Violent Recidivism after Release from Probation

(ESS = 45.44%; PAC = 79.32%; 15.8% Violent Recidivism Rate)

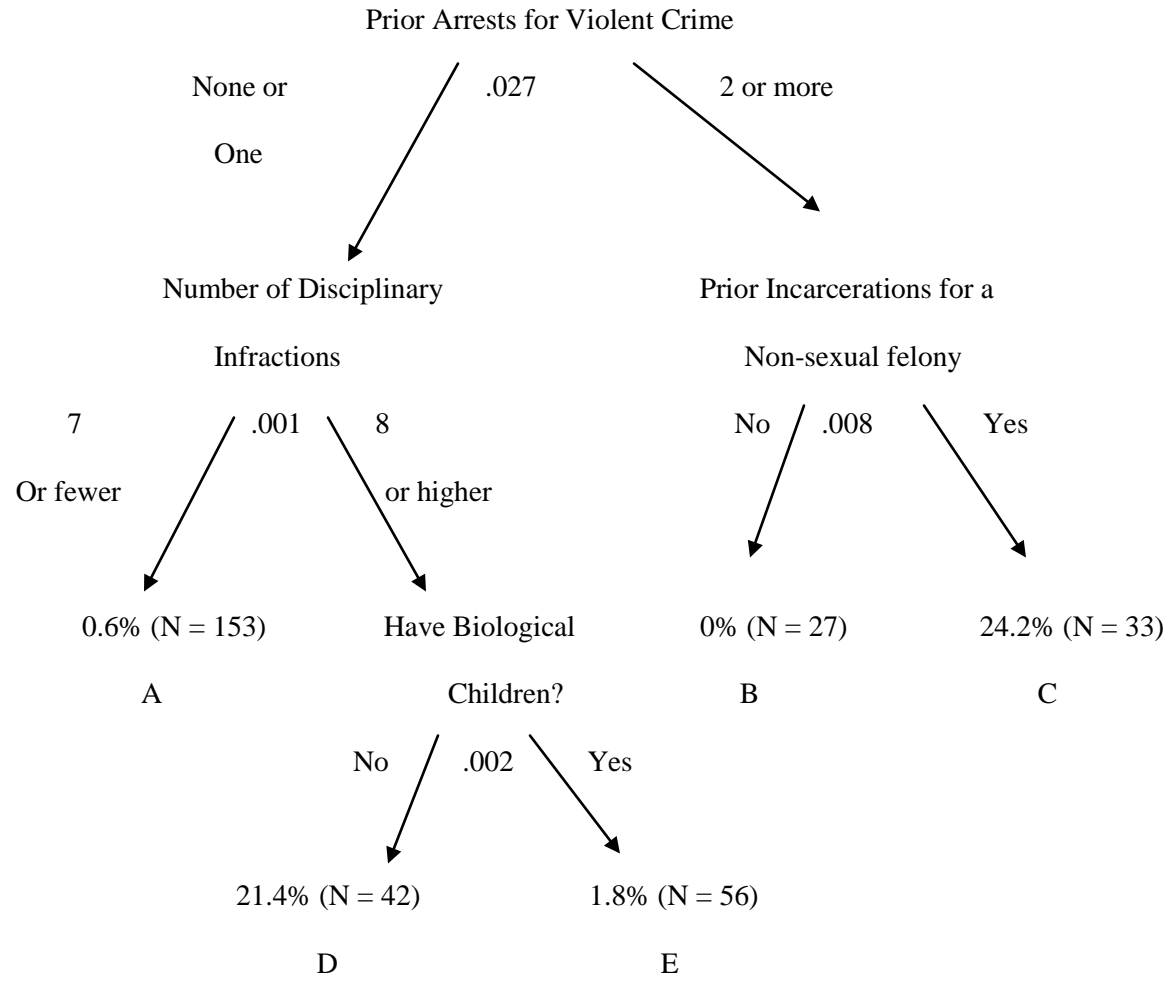


The baserate for violent recidivism after release from probation supervision was 15.8%. The low risk group was defined as one-half of the baserate or 7.9% or lower, the moderately high risk group was 1.5 times the baserate or 23.7% to 31.5%, and the very high risk was 2 times the baserate or 31.6% and higher. Figure 4.2 shows four subgroups of sex offenders at a very high risk of violent recidivism after release from probation supervision. Two of the very high risk subgroups were never married sex offenders who graduated from high school and had one of the following characteristics: (a) scored 8 or higher on the STATIC-2002; and (b) scored 7 or lower on the STATIC-2002 and the sex offense that placed the offender on probation involved vaginal or anal penetration. Another very high risk subgroup of sex offenders were never married and high school dropouts with at least one prior arrest for a violent crime. Currently or formerly married sex offenders who had prior drug treatment and were required to pay child support were at a very high risk of violent recidivism whereas formerly or currently married sex offenders who satisfactorily completed sex offender treatment and did not have any prior drug treatment were at a low risk of violent recidivism. Moreover, married sex offenders who did not satisfactorily complete sex offender treatment were at a low risk of violent recidivism, with only 2.3% of this subgroup being arrested for a violent recidivism after release from probation supervision.

#### CTA Model Predicting Violent Recidivism for the Prison Sample

Figure 4.3 presents the four variable CTA model predicting violent recidivism while on parole supervision for the prison sample. The CTA model showed strong performance with an ESS of 69.6% and overall accurately classifying 80.7% of the cases. The CTA model accurately predicted 80.1% of the non-recidivists and 89.5% of the recidivists, and the bootstrapped validity analysis demonstrated that the 95% confidence intervals were small with four-tenths of one percentage point. The 95% confidence interval for the endpoints of the CTA tree were quite small with endpoint C having a width of four-tenths of one percentage point and endpoint D having a width of five-tenths of one percentage point.

Figure 4.3. CTA Model Predicting Violent Recidivism While on Parole Supervision for the Sample of Sex Offenders Released from Prison





Endpoints A and B had confidence intervals that were extremely small less than one-tenth of one percentage point, and endpoint E's confidence interval ranged from 1.74% and 1.84%. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

The rate of violent recidivism while on parole supervision was 6.9%. The CTA model identified three low risk subgroups and three very high risk subgroups. The high risk subgroups had violent recidivism rates while on parole supervision that ranged between 21.4% and 24.2%. One very high risk subgroup of sex offenders was comprised of 2 or more prior arrests of violent crimes and at least one prior incarceration for a non-sexual felony. The other very high risk subgroup of sex offenders had none or one prior arrest for a violent crime, 8 or more disciplinary infractions during prison, and had no biological children.

Figure 4.4 presents the three variable CTA model predicting violent recidivism after release from parole supervision for the prison sample. The baserate for violent recidivism after release from parole supervision was 14.8%. The CTA model showed strong performance with an ESS of 49.7% and overall accurately classifying 74% of the cases. The CTA model accurately predicted 73.6% of the non-recidivists and 76.1% of the recidivists, and the bootstrapped validity analysis demonstrated that the 95% confidence intervals were small with a range of two-tenths of one percentage point. The 95% confidence interval for endpoints of the CTA tree was 6.58% to 6.36% for endpoint A, 36.9% to 37.2% for endpoint B, 3.62% to 3.74% for endpoint C, and 27.20% to 27.60% for endpoint D. Thus, all endpoints had extremely small 95% confidence intervals in bootstrapped validity analysis. The bootstrapped results provide cross-validation evidence that the CTA model will replicate when new samples of data are used.

Figure 4.4. Predicting Violent Recidivism After Release from Parole Supervision for the Prison Sample



Figure 4.4 shows that the CTA model combines three significant risk factors: prior arrests for violent crimes, age of offender at release from prison and relationship of the offender to the victim. Offenders who were 33 years of age or younger and had prior arrests for violent crime were at a very high risk of violent recidivism after release from parole, with 36.9% of this subgroup having a new arrest for a violent crime. Sex offenders who victimized their grandchildren, stepchildren, or girlfriend's children with whom they were living were at a moderately high risk of violent recidivism after release from parole supervision if they had a prior arrest for a violent crime and were 34 years of age or old, with 27.5% of the offenders having a new arrest for a violent crime.

### Conclusions

Across the CTA models, offenders with a prior arrest for a violent crime were classified as high risk if they were in one of these three subgroups: (a) never married and a high school dropout; (b) did not have any VOP for noncompliance with sex offender treatment and were charged with a sex crime against an adolescent victim (b) 33 years of age or younger; (c) 34 years of age or younger and sex offenders' relationship to victim was a stepfather, live-in boyfriend, or grandfather; (d) had two or more prior arrests for a violent crime and a prior incarceration for a non-sexual felony. Two of the very high risk subgroups were never married sex offenders who graduated from high school and had one of the following characteristics: (a) scored 8 or higher on the STATIC-2002; and (b) scored 7 or lower on the STATIC-2002 and the sex offense that placed the offender on probation involved vaginal or anal penetration. These findings indicate that a prior arrest for a violent crime was a significant risk factor and with limited additional information such as age of the offender or noncompliance with treatment offenders with prior history of violence were at high risk for violent recidivism. Moreover, the findings suggest that for never married high school graduates, the score on the STATIC-2002 had predictive accuracy in classifying offenders as low and high risk so long as the offenders did not have a prior incarceration for a non-sexual felony. The STATIC-99 was a significant predictor of violent recidivism for both the probation sample and the

prison sample. The RRASOR was a significant and generalizable risk factor for the probation sample, but was unstable though significant for the prison sample; in both sample, it showed weak classification accuracy above chance performance.

The data did not include treatment noncompliance for the prison sample. However, for the probation sample, treatment noncompliance was an important defining risk factor. In the probation sample, both of the low risk groups for violent recidivism during probation supervision had no VOP for noncompliance with treatment and no prior arrests for violent crime. Sex offenders who were 32 years of age or younger and had one or more VOP for treatment noncompliance were at a very high risk of committing a sex crime while on probation if they were scored as medium or high risk on the SACJ-min or were scored as low risk on the SACJ-min and were on probation for the misdemeanor crime of criminal sexual abuse. Sex offenders convicted of criminal sexual abuse were originally charged with more serious felony sex crimes; however, due to evidence or other circumstances, the offenders were able to obtain a plea negotiation of a misdemeanor of criminal sexual abuse. Thus, these sex offenders learned from their experience that the system was lenient and were not deterred.

*Chapter 5. Comparison of Probation and Prison Samples on Risk Factors and Recidivism Rates*

How similar are the probation sample and prison sample on offender and offense characteristics as well as recidivism and scores from standardized risk assessment instruments? To address this question, chi-square and analysis of variance (ANOVA), analyses first were conducted to compare the probation sample and the prison sample on offenders' social, mental health, sexual deviancy, and criminal history characteristics as well as characteristics of the sex offense that placed them in prison or probation. Bivariate analyses also were initially conducted to determine whether the two samples differed on recidivism and risk assessment scales assessing sexual recidivism. Surprisingly, the probation sample on the standardized assessment scales assessing the risk of sexual recidivism had a greater percentage of offenders in the moderately high and high risk categories. The prison and probation sample did not differ on drug, property, violent, or serious sexual recidivism after release from supervision, but the probation sample had a significantly higher rate of all types of recidivism while on probation supervision compared to the prison sample while on parole supervision. Of course, this may be due primarily on few cases of parole violators being selected for the prison sample. Before examining the outcome measures, we compare the prison and probation sample on offense and offender characteristics to determine whether the two samples are comparable.

Table 5.1 presents the demographic characteristics and prior social and treatment histories. On these variables, the prison and probation samples were not significantly different beyond chance level. The prison and probation sample had a similar average age of around 34 years old at the time of conviction, and the majority of both samples (70%) were employed at the time of intake. When the mean ages of the offenders in the probation and prison sample were compared, they were statistically similar to each other, with an average age in both groups of offenders

Table 5.1: Comparison of Demographic and Social Background Characteristics of the Probation and Prison Sex Offender Samples

	<b>Probation (N=846)</b>	<b>Prison (N=321)</b>	<b>Chi-square Value and correlation</b>
<b>Age at Offense</b> (Mean, Years) F=0.02, p=.89	34.1	33.9	F = .02, p < .89
<b>Race</b>	X <sup>2</sup> =68.9, 2df, p<.001, Cramer's V =.23, p<.001		
White	54.6%	29.7%	
African-American	24.8%	44.5%	
Hispanic	20.5%	25.8%	
<b>Education Level</b>	X <sup>2</sup> =97.9, 2df, p<.001, Cramer's V=.29, p<.001		
No HS Diploma or GED	39.5%	73.8%	47.1%
HS Diploma or GED	31.7%	9.4%	26.7%
Some College/College Degree	28.8%	16.8%	26.1%
Unemployed at time of intake	31.5%	28.9%	X <sup>2</sup> =0.6, Phi=.02, p=.43
Used alcohol at the time of intake	59.1%	31.8%	X <sup>2</sup> = 70.04, Phi=-.25, p=.0001
Used illicit drugs at the time of intake	47.7%	27.3%	X <sup>2</sup> = 40.29, Phi=-.19, p=.0001
Prior Substance abuse treatment	17.5%	36.5%	X <sup>2</sup> =52.4, Phi=.20, p<.001
Has a serious mental illness	37.8%	39.7%	X <sup>2</sup> =0.4, Phi=.02, p < .53
Prior Psychiatric Treatment	22.2%	26.4%	X <sup>2</sup> =2.4, Phi=.05, p=.11
Objective Sexual Arousal Towards Children	19.0%	25.7%	X <sup>2</sup> =6.4, Phi=.08, p<.05
Has sadistic or violent tendencies	9.7%	42.4%	X <sup>2</sup> =166.95, Phi=.38, p<.001
Is a gang member	5.6%	26.1%	X <sup>2</sup> =108.8, Phi=.29, p<.001

being roughly 34 years old. About one-quarter of both groups had evidence of prior psychiatric treatment, and almost 40 percent of both groups were identified as having a serious mental illness.

On the other hand, statistically significant and substantively large differences were noted between the probation and prison sex offender samples when race, education level, gang involvement, and prior substance abuse treatment were compared. In general, the probation sample consisted primarily of white offenders with most having completed high-school and not being gang involved. On the other hand, the prison sample consisted primarily of non-whites, the majority of whom had not completed high-school and many of which were gang involved. For example, nearly three-quarters (73.8 percent) of the prison sample did not finish high school compared to roughly 40 percent of the probation sample. Similarly, more than one-quarter (26.1 percent) of the prison sample was identified as gang involved, compared to less than 6 percent of the probationers. The prison sample also had a slightly higher prevalence of exhibiting sexual arousal towards children than the probation sample (25.7 percent versus 19 percent, respectively).

Table 5.2 compares the probation sample and the prison sample on characteristics of the current offense. As shown in Table 5.2, the sample of sex offenders released from prison were substantially more likely to have been convicted of aggravated criminal sexual assault than were the probationers whereas a larger proportion of probationers were convicted of criminal sexual abuse than those in the prison sample. The offenders in the prison sample were much more likely to have used force in their current offense than were the probationers (41 percent versus 25 percent, respectively), and the probationers were much more likely to have victimized strangers than was the prison inmate sample. The probationers were also more likely to have multiple victims (29 percent had multiple victims) than were the prison inmates (14 percent). On the other hand, the average ages of the youngest victims of both the probation and prison samples were statistically similar to each other, with an

Table 5.2: How Sex Offenders Sentenced to Probation and those Sentenced to Prison Differ on the Characteristics of the Sex Crimes

	<b>Probation (N=918)</b>	<b>Prison (N=321)</b>	<b>Chi-square, p-value</b>
<b>Current Conviction Offense</b>	$X^2 (4) = 296.4, p < .0001$		
Criminal Sexual Assault	18.6%	18.8%	
Aggravated Criminal Sexual Abuse	47.1%	21.3%	
Aggravated Criminal Sexual Assault	12.3%	56.0%	
Other Sex Offense	21.8%	4%	
Used Alcohol or Drugs before committing sex crime	26.4%	36.5%	$X^2 = 8.7, \text{Phi} = -.10, p < .003$
Used a weapon	1.6%	12.8%	$X^2 = 61.9, \text{Phi} = .24, p < .001$
Used Physical Force during sex crime	24.6%	41.4%	$X^2 = 33.9, \text{Phi} = .16, p < .001$
Victim was a boy	25.9%	14.8%	$X^2 = 16.7, \text{Phi} = .12, p < .001$
<b>Victim/Offender Relationship</b>	$X^2 = 344.5, 2df, p < .001, \text{Cramer's } V = .55, p < .001$		
Family Member/Relative/Live-in-Boyfriend	38.7%	47.4%	
Acquaintance	1.3%	36.1%	
Stranger	60.0%	16.6%	
Single victim	70.8%	86.3%	$X^2 = 32.6, \text{Phi} = .16, p < .001$
Age of Youngest Victim (Mean, Years)	13.2	13.7	$t (348.71) = -.73, p < .46$
Mean # of Years on probation or in prison	2.8	4.4	$F = 157, p < .001$
Mean # of counts on original indictment	4.21	3.01	$t (768.8) = 2.94, p < .003$
Count of Aggravated criminal sexual assault	17.3%	70.2%	$X^2 = 281, \text{Phi} = -.51, p < .001$
Count of a sex crime against an adolescent	24.5%	15.3%	$X^2 = 10.8, \text{Phi} = .10, p < .001$
Count of a sex crime against a family member	22.8%	11.5%	$X^2 = 18.5, \text{Phi} = .13, p < .001$
At least one count of unlawful restraint	11.7%	8.9%	$X^2 = 1.8, \text{Phi} = .04, p < .182$
Count of force related sex crime	13.3%	16.7%	$X^2 = 2.1, \text{Phi} = -.045, p < .15$
Count of other charges on indictment	37.9%	22.2%	$X^2 = 24.8, \text{Phi} = .15, p < .001$

average age of roughly 13 years old. Original indictments also were coded. Aggravated criminal sexual assault was a charge on the original indictment for 70.2% of the prison sample compared to a substantially and significantly lower percentage of 17.3% of the probation sample.



Significant differences were also noted in the prior criminal history of the two samples examined, with the prison sample not only having a much more extensive prior criminal history, but also a more varied (i.e., types of different crimes) criminal past than the probationers (Table 5.3). Only one-third of the prison sample had no prior arrests compared to 43.6% of the probation sample. At the other end of the continuum, 15% of the prison sample had 10 or more prior arrests compared to less than 10% of the probation sample. The prison sample was also more likely to have prior arrests for property crimes than the probation sample: 41% of the prison sample had at least one prior arrest for a property crime, compared to about 28% of the probation sample. Similarly, 20% of the prison sample had at least 1 prior arrest for a drug-law violation, compared to less than 10% of the probation sample. Lastly, the prison sample compared to the probation sample was also more likely to have prior arrests for violent crimes, which included domestic violence offenses. Offenders were classified as domestic batterers if they had any arrests for a domestic violence crime in their criminal history, current offense, or since being sentenced to probation or prison.

Table 5.3. Comparison of Prison and Probation Sample on Criminal History Measures

	Probation (N=918)	Prison (N=321)	Chi-square value, p-value
<b>Total number of Prior Arrests for any crime</b>			
None	43.6%	33.7%	$X^2=22.6$ , Cramer's $V=.14, p<.001$
1 to 4	36.2%	33.7%	
5 to 9	11.1%	17.5%	
10 to 14	3.7%	6.6%	
15 or more	5.4%	8.4%	
<b>Prior Arrests for Sex Crimes</b>			$X^2 = 8.6$ , Cramer's $V = .08$ , $p < .017$
None	83.2%	89.2%	
One	7.8%	6.2%	
Two or more	9.1%	4.5%	
Prior Arrest for a property crime	27.6%	41.0%	$X^2=20.1$ , $\Phi=.13$ , $p<.001$
Prior Arrest for drug crime	9.7%	19.9%	$X^2=23.2$ , $\Phi=.13$ , $p<.001$
Prior arrest for violent crime	28.6%	47.9%	$X^2=40.8$ , $\Phi=.18$ , $p<.001$
Domestic Batterer	18.3%	18.4%	$X^2=0.0$ , $\Phi=.00$ , $p=.96$
<b>Number of Sentencing Dates</b>			$X^2 = 62.3$ , Cramer's $V = .22$ , $p < .0001$
One	80.6%	59.5%	
Two	10.0%	18.7%	
Three	2.8%	7.5%	
Four or more	6.6%	14.2%	

Table 5.4 presents a comparison of the probation and prison samples on new arrests while on supervision and when released from supervision. As shown in the bottom of Table 5.4, the overall rates of any serious sex crime during the average ten year follow-up period for probation was 21.6% which is much higher than the average rate of 13.7% found across 82 studies in Hanson and Morton-Bourgon 2005 meta-analysis, and the rate of 23.3% and 19.4% for violent recidivism is higher than the average rate of 14.3% in the meta-analysis.

As shown in Table 5.4 under the section of rates after release from supervision, the two samples had similar rates after release from supervision for new violent crimes, property crimes, and drug crimes. The rate for serious sex crimes, defined as any hands-on sex crime or pornography, also were similar with 7.3% of the probation sample and 5.5% of the prison sample having an arrest for a serious sex crime after release from supervision. However, the samples were significantly different for any sex crime due to the probation sample having a higher rate of public indecency arrests for the probation sample than the prison sample. Moreover in the second section of Table 5.4, the probation sample had a rate of 20.4% for any sex crime and 17.4% for serious sex crime during supervision whereas the prison sample had rates of 4.6% during parole supervision. These different rates may be due to different levels of supervisions with the specialized probation supervision using polygraphs and random surveillance and more field visits to catch offenders committing additional sex crimes. It also may be due to difference in criminal history, risk of sexual recidivism, and other characteristics.

Table 5.4. Comparing Recidivism Measures of Probation and Prison Sex Offender Samples

<b>Outcomes: % with new crime or risk assessment score</b>	<b>Probation (N=846)</b>	<b>Prison (N=331)</b>	<b>Chi-square</b>	<b>Phi or Cramer's V</b>
<b>Recidivism After Release from Supervision</b>				
Any new property crime	11.0%	8.5%	1.62, p < .20	-.04, p < .19
Any new drug crime	9.0%	8.8%	.01, p < .92	-.003, p < .92
Any new violent crime	15.6%	14.8%	.10, p < .75	-.01, p < .75
Any new sex crime	11.0%	6.1%	6.75, p < .01	-.08, p < .01
Any new serious sex crime	7.3%	5.5%	1.28, p < .26	-.03, p < .26
Any new crime of any type	38.7%	31.2%	5.66, p < .017	-.07, p < .017
<b>Recidivism While Under Probation or Parole Supervision</b>				
Any sex crime	20.4%	4.6%	44.50, p < .0001	-.20, p < .0001
Any serious sex crime	17.4%	4.60%	32.74, p < .0001	-.17, p < .0001
Any new violent crime	11.5%	7.0%	5.27, p < .02	-.07, p < .02
Any new drug crime	5.6%	3.9%	1.28, p < .26	-.03, p < .26
Any new property crime	9.3%	4.2%	8.5, p < .004	-.09, p < .004
<b>Total Sexual and Violent Recidivism For Entire Period during and After Supervision</b>				
Any sex crime	26.2%	9.7%	38.13, p < .0001	-.18, p < .0001
Any serious sex crime	21.6%	9.1%	24.98, p < .0001	-.15, p < .0001
Any violent crime	23.3%	19.4%	2.08, p < .14	-.04, p < .15

Table 5.5 presents a comparison of the prison sample and the probation sample on their scores and classification from four standardized risk assessment scales assessing the risk of sexual recidivism: The Static-99, Static-2002, Structured Anchored Clinical Judgment (SACJ-min), and Rapid Risk Assessment Sex Offense Recidivism (RRASOR), and two subscales of the STATIC-2002. As shown in Table 5.5, the probation sample had a higher proportion of offenders classified as medium high on the Static-99 and high risk on the Static-2002 than did the prison sample. The probation sample also had significantly higher scores on the Static-2002 subscale of general criminality and on the Static-2002 subscale of persistent sexual deviancy. On the persistent sexual deviancy subscale, 62.9% of the probation sample and 12.1% of the prison sample had a score of one or two. On the general criminality sub-scale of the Static-2002, .2% of the probation sample and 23% of the prison sample. Slightly over half (51%) of the probation sample and only 16.4% of the prison sample had a score of 7 or higher on the STATIC-2002.

Table 5.5 Comparing Risk Assessment Scores of the Probation and Prison Sample

Risk Assessment Scales			Chi-square	Cramer's V
Static-99	Probation	Prison	70.67, p < .0001	.25, p < .001
Low	26.2%	30.3%		
Medium-Low	36.1%	56.4%		
Medium-High	32.6%	11.2%		
High	5.1%	2.1%		
STATIC-2002 Score			142.6, p < .0001	.35, p < .0001
1 to 3	9.0%	26.7%		
4 to 5	24.8%	38.2%		
6	14.3%	18.8%		
7 to 11	51.9%	16.4%		
General Criminality Subscale of Static-2002			210.0, p < .0001	.42, p < .0001
0	.2%	23.0%		
1 OR 2	60.5%	46.4%		
3 OR 4	39.1%	29.1%		
5 OR 6	.1%	1.5%		
Persistence Sexual Deviancy Subscale of Static-2002			443.2, p < .0001	.61, p < .0001
0	14.5%	77.9%		
1	21.0%	8.2%		
2 or 3	62.9%	12.1%		
4 or 5	1.5%	1.8%		
Structural Anchored Clinical Judgment minimum version			12.24, p < .002	.10, p < .002
Low Risk	25.9%	36.1%		
Medium Risk	49.9%	44.2%		
High Risk	24.2%	23.0%		
RASSOR Score			54.56, p < .0001	.22, p < .0001
0	21.9%	9.1%		
1	34.5%	53.3%		
2	33.5%	30.9%		
3	8.7%	3.6%		
4 or 5	1.4%	3.0%		

Table 5.6 presents in the Uni-ODA analyses examining the predictive accuracy of the standardized risk assessment scales at predicting sexual recidivism during and after release from supervision for the probation and prison sample. The ESS refers to the standard statistic called “effect strength of sensitivity. ESS can range between 0 and 100, where 0 means no improvement in classification accuracy above chance, and 100 means that the predictor explains all variation (errorless classification). Assuming equal sample sizes in the groups to be discriminated, for a dichotomous variable, chance could achieve a mean sensitivity across classes of 50%, and thus this corresponds to an ESS of 0. Table 5.7 presents the ROC analyses showing the predictive strength of the risk assessment scales at predicting sexual recidivism. The ROC analyses plot the proportion of accurately identified recidivists (hits) and the proportion of sex offenders who were incorrectly labeled as recidivists (false alarms) for each score of the risk assessment scale. The area under the curve (AUC) statistic can range from .50 to 1.00 with .50 indicating that the scale does not perform any better than chance, and 1.00 indicating that the scale shows no overlap between recidivists and non-recidivists and has errorless (perfect) classification. and in the bottom half the Area Under the Curve coefficients (AUC) and 95% confidence intervals for the AUC. Researchers interpret the AUC statistic has a measure that indicates the probability that a recidivist would have a more deviant score on a risk assessment scale than a nonrecidivist. The AUC and the ESS are not constrained by the base rate of the outcome measure.

Both sets of analyses show that most risk assessment scales did not predict sexual recidivism for the prison sample. The Rapid Risk Assessment for Sexual Offenses showed a stable and significant performance for predicting sexual recidivism after release from parole for the prison sample in the Uni-ODA results presented in Table 5.6, but the ROC analysis in Table 5.7 was not significant. The ESS of 28 means that the RASSOR improved classification accuracy 28% beyond chance performance, but the non-significant AUC means that the RASSOR did not perform above chance level at predicting whether a case was a recidivist or a non-recidivist. None of the scales predicted sexual recidivism of the prison sample while they were on parole supervision. By contrast, all four scales significantly improved classification accuracy for both sexual

recidivism during and after supervision for the probation sample. The overlap in the AUC confidence intervals in Table 5.7 indicates that the scales had comparable performance. Thus, no one scale showed superior performance at predicting sexual recidivism.

Table 5.6 Uni-ODA Analyses of the Relationship between Risk Assessment Scales and Sexual Recidivism After Release from Supervision

	Prison Sample		Probation Sample	
<b>Sexual Recidivism After Release From Supervision</b>				
<b>Risk Assessment Scales</b>	p-value	ESS	p-value	ESS
RRASOR score is 2 or higher	.018	28.00	.007	14.88 (13.96)
Static-99 medium or high risk	.17	20.27 (12.12)	.0001	18.55 (18.28)
Medium or High risk on SACJ-min	.36	14.95	.0001	16.47
STATIC-2002 Score >6.5	.57	12.65 (10.59)	.0001	27.40 (22.06)
<b>Sexual Recidivism During Supervision</b>				
<b>Risk Assessment Scales</b>	Prison Sample		Probation Sample	
	p-value	ESS	p-value	ESS
RRASOR	.68	10.13	.0001	21.86
STATIC99 Classification is High Risk	.059	26.03	.003	14.93
High Risk on SACJ-min	.096	24.17 (7.12)	.003	12.91
STATIC-2002 Score Greater than 8	.15	23.78 (-8.91)	.008	11.01 (7.70)



Table 5.7 ROC Analyses Examining the Relationship between Risk Assessment Scales and Sexual Recidivism for the Prison and Probation Samples

ROC ANALYSES – AREA Under the CURVE (AUC) Coefficients and 95% Confidence Intervals (CI)				
Sexual Recidivism After Release from Supervision				
	Prison Sample		Probation Sample	
	p-value	AUC (95% CI)	p-value	AUC (95% CI)
RRASOR	.07	.62 (.48 to .76)	.001	.61 (.55 to .67)
STATIC-99	.10	.61 (.49 to .73)	.001	.63 (.57 to .69)
SACJ-min	.70	.47 (.32 to .62)	.65	.65 (.61 to .72)
STATIC-2002	.29	.57 (.44 to .70)	.001	.67 (.61 to .72)
Sexual Recidivism During Supervision				
	Prison Sample		Probation Sample	
	p-value	AUC (95% CI)	p-value	AUC (95% CI)
RRASOR	.74	.52 (.37 to .68)	.001	.58 (.53 to .63)
STATIC-99	.10	.63 (.49 to .76)	.001	.59 (.54 to .64)
SACJ-min	.22	.60 (.44 to .75)	.001	.66 (.62 to .71)
STATIC-2002	.12	.62 (.49 to .75)	.001	.60 (.55 to .64)

The second column of Table 5.8 presents the logistic model predicting any sexual recidivism during supervision. As shown, the probation sample has a 2.45 times significantly higher rate of sexual recidivism during supervision than the prison sample after controlling for risk assessment scores, prior incarceration, general criminality, sexual perversion, prior arrests for violent crimes, whether an extrafamilial offender or psychopathic deviant, and whether has an interest in hands off sexual offending. This higher rate of the probation sample, however, may not mean that the imprisonment and parole supervision was a better deterrent, but that the probation supervision was better able to detect sexual offending. There were many incidents where probation officers caught offenders committing sexual crimes or were able to elicit a confession from the offender that they had committed a sex crime. Moreover, consistent with prior research, the prison and probation sample did not differ on serious sexual recidivism during supervision. Other logistic regressions, consistent with the univariate results, also confirmed that the two samples had similar rates of any sexual recidivism and serious sexual recidivism during the seven year period when offenders were not under formal supervision.

Cox Regression survival analyses were performed to examine the timing of new arrests for any sex offense during and after release from probation, and for any violent offense (excluding sex offenses) for the entire follow-up period (including both during and after release from probation). Table 5.9 presents the Cox Survival Analysis for predicting time to new arrest for a sex crime in the second and third columns and the model for predicting time to new arrest for a violent non-sexual crime in the fourth and fifth columns. Table 5.9 shows the control variables that were significant predictors of the time to new arrest for a sex crime or violent crime. The Static 2002 risk assessment subscales of general criminality and sexual deviancy, and the SACJ-min risk classification were included as predictors. Furthermore, we tested an interaction between the SACJ-min and type of sample. As shown in the second column of Table 8, after including the interaction term, the probation and prison

samples had similar sexual recidivism rates. However, the SACJ-min significantly predicted sexual recidivism for the probation sample, but was not a significant predictor of the prison sample. Thus, the prison and probation sample are shown to have unique risk predictors.

Table 7. Logistic Regression Models Predicting Sexual Recidivism and Serious Sexual Recidivism During Supervision  
(Unstandardized Coefficients, Odds Ratio)

Variables	Any Sexual Recidivism During Supervision		Serious Sexual Recidivism During Supervision	
	Coefficient (Odds Ratio)	p-value	Coefficient (Odds Ratio)	p-value
Prison (0) compared to Probation (1)	.90 (2.45)	.04	.31 (1.30)	.54
Prior incarceration	-.74 (.48)	.03	-1.25 (.28)	.002
General Criminality Scale of Static-2002	.71 (2.49)	.0001	.79 (2.20)	.0001
Sexual Deviancy Scale of Static-2002	.17 (1.49)	.13	.15 (1.39)	.19
Prior arrests for violent crimes	-.26 (.77)	.018	-.31 (.73)	.01
Extrafamilial Offender	.58 (1.77)	.05	.55 (1.73)	.07
Psychopathic Deviant	1.09 (3.00)	.001	1.05 (2.84)	.002
Interest in Hands off Sexual Offending	.81 (2.37)	.0001	.57 (1.71)	.008
RRASOR	-.08 (.92)	.47	-.04 (.95)	.75
Model Chi-square	153.98		102.1	
p-value	.001		.001	
Nagelkerke R-square	.24		.18	

Table 8. Cox Regression Survival Analysis Predicting Time to Any Sexual Recidivism and Any Violent Recidivism

Variable	Time to Any Sexual Recidivism		Time to Any Violent Recidivism	
	Coefficient (Odds Ratio)	p-value	Coefficient (Odds Ratio)	p-value
Probation (0) vs. Prison (1)	-.15 (.85)	.74	-.14 (.87)	.51
General Criminality Scale of Static 2002	.67 (1.96)	.001	.72 (2.04)	.001
Sexual Deviancy Scale of Static 2002	.034 (1.04)	.67	.06 (1.07)	.46
Interest in Hands Off Sexual Offending	.51 (1.67)	.002	.17 (1.18)	.34
Psychopathic Deviancy	.68 (1.97)	.004	n/a	
Domestic Batterer	.25 (1.28)	.13	n/a	
Extra-Familial Offender	.45 (1.66)	.06	.08 (1.08)	.68
Prior arrests for Sex Crimes	.05 (1.05)	.66	-.51 (.60)	.001
Prior arrests for violent crimes	-.18 (.83)	.04	n/a	
SACJ-min risk category	-.57 (.57)	.08		
Model with interaction: SACJ-min and probation	.65 (1.97)	.04		
Number of Sentencing Dates	n/a		-.49 (.61)	.001
Total Number of prior arrests	n/a		.08 (1.08)	.68
Unemployed offender	n/a		.37 (1.45)	.009
Model Chi-square	138.56		127.58	
p-value	.0001		.0001	

## Conclusions

These findings provide a comparison of offenders released from probation supervision and offenders released from prison in one state. It is clear that sex offenders with more diverse and longer criminal histories are sentenced to prison rather than probation. It is also clear that the sex crimes, based on their original indictments and the nature of the crime as described in the police reports or state's attorney's description, were very different. Sex offenders sentenced to prison were more likely to use a weapon during the sex crime for which they were convicted, to victimize an acquaintance, and have at least one count of aggravated criminal sexual assault on the original indictment. About 60% of the probation sample victimized a stranger whereas the majority of the prison sample victimized either an acquaintance or a family member. Though released imprisoned offenders were more likely to use physical force during the sex crime for which they were convicted, the probation supervised and released imprisoned sex offenders were similar in having at least one count of physical force during a sex crime on their original indictment. However, the released imprisoned offenders were more likely to have aggressive or sadistic tendencies and to have a more diverse and longer criminal history including property, drug, and violent offenses. The findings indicate that sex offenders who receive probation are more likely to be Caucasian with most having completed high-school and not being gang involved. On the other hand, the prison sample consisted primarily of non-whites, the majority of whom had not completed high-school and many of which were gang involved.

On the risk assessment scales, the probation sample was more likely to be medium or high risk on the STATIC-99, STATIC-2002, and SACJ-min. On the STATIC-2002, the probation sample scored higher on persistence sexual deviancy whereas the prison sample scored higher on general criminality. Because the RRASOR focuses on criminal history and the nature of the sex crime, the prison sample had a significantly higher risk score than did the probation sample. Interestingly, the risk assessment scales were significant predictors of the probation samples

sexual recidivism, but not the prison sample. This finding may have more to do with the make-up of the sample on other characteristics rather than sentence received. For example, the probation sample consisted of 60% of offenders who victimized strangers whereas only 16% of the prison sample victimized strangers and 47% of the prison sample victimized a family member and the prison sample had a higher percentage of offenders who were violent sex offenders rather than non-violent sex offenders. Moreover, all of these risk assessment scales assign more weight to criminal history and criminal history may not be an important risk factor for certain subgroups of sex offenders such as violent sex offenders. The differential performance of the risk assessment scales for these two populations suggest that future research should continue to investigate the unique risk factors for subgroups of sex offenders.

In this comparison, the probation and prison sample had similar time to first arrest for any sex crime and for any violent crime once the effects of other risk factors were removed. The logistic regression revealed that the probation sample had a higher rate of any sexual recidivism during supervision, but that the probation and prison samples had similar rates of any sexual recidivism and any serious sexual recidivism after release from supervision. The comparison of prison and probation samples may not be informative about whether incarceration deters sexual offending due to the fact that probation supervision may be able to detect additional crimes and that the samples are very different on a wide array of characteristics.

## Chapter 6:

### Comparing Sex Offenders Who Are Non-Violent, Other Violent, and Domestic Batterers on Risk Factors for Sex Recidivism<sup>6</sup>

With over 60% of child molesters sentenced to probation (Greenfeld, 1997), it is crucial to understand the risk factors related to sexual recidivism. Research on domestic batterers has found that those who commit violent crimes against both intimate partners and non-family members have a much higher risk of committing additional violent crimes while on probation supervision (Stalans et al., 2004). Based on this indirect evidence, a practical question for risk assessment is suggested: Do sex offenders who are also domestic batterers have a significant higher rate of sexual recidivism during probation supervision and after release from probation supervision? In many jurisdictions, probation departments have created specialized sex offender probation units and specialized domestic batterer probation units. Each of these units has more intensive and specialized supervision including field searches, more frequent office visits, specialized treatment, and a long list of specific conditions that attempt to minimize the opportunity and temptation to commit additional crimes. Offenders are sentenced to specialized intensive probation units based on their current convicted offense. In practice, the criminal justice system assumes that there is little overlap between domestic batterers and sex offenders. Research, however, suggests that many sex offenders are generalists committing a wide variety of crimes (Lussier, 2005).

Studies on risk assessment have not empirically examined the extent to which child molesters are also domestic batterers and have sometimes treated these classifications as mutually exclusive categories (e.g., Abracen et al., 2006; Gudjonsson & Sigurdsson, 2000;

---

<sup>6</sup> This chapter has been partially published in: Stalans, L. J., Hacker, R. J., & Talbot, M. E. (2010). Predictive Validity of Risk Assessment Scales and Risk Factors for Sexual Recidivism for Three Subgroups of Sex Offenders: Non Violent, Other Violent, and Domestic Batterers. *Criminal Justice and Behavior*, 37, 613-628.

Hanson, Gizzarelli, & Scott, 1994). . The current study examines an understudied group of sex offenders, those who are also domestic batterers toward intimate partners, and assesses whether the predictive validity of standardized risk assessment scales and risk factors varies across non-violent sex offenders compared to sex offenders who have committed violent crimes.

*Partitioning Sex Offenders Based on Violent History and Examining the Understudied Sub-Group of Sex Offenders: Domestic Batterers*

Research on sex offenders generally has defined subgroups of sex offenders based on the age of the victim or the relationship of the offender to the victim. Several studies have compared rapists and child molesters who victimized a legal minor (e.g., Abracen et al., 2006; Gudjonsson & Sigurdsson, 2000; Knight & Thornton, 2007; Prentky, Knight, & Lee, 1997). Researchers argue that rape is primarily about anger toward women and adolescent girls and showing domination over them (e.g., Groth & Burgess, 1977; Milner & Webster, 2005). Research has shown that hostility toward women and girls is the most prevalent schema among rapists (Milner & Webster, 2005). This argument raises the issue of whether the age of the victim or the propensity for violence is the most informative characteristic in understanding sex offenders' sexual recidivism. Moreover, this argument suggests that men who sexually assault adolescents who are 13 years of age or older could be classified as rapists. Indeed, prior studies have used varying definitions of rapists with some using the criteria that the victim must be 13 and older and others using 18 and older (Gudjonsson & Sigurdsson, 2000; Knight & Thoreau, 2007; Stermac, Hall, & Henskens, 1989). The federal funds for research from the Violence Against Women Act defined rape as committed against victims aged 14 or older.

Other research has examined whether prior arrests or convictions for non-sexual violent crimes were predictors of sexual recidivism. In standardized risk assessment scales such as the STATIC-99, STATIC-2002, and SACJ-Min, convictions for nonsexual violent crime as part of the index offense and prior convictions for nonsexual violent crimes are characteristics that increase the risk of sexual recidivism (Hanson & Thornton, 2000; Hanson & Thornton, 2003). Moreover, Freeman (2007) measured prior arrests for violent felony crimes and found an average of



1 prior arrest for their sample of 4,700 child molesters and an average of 1.22 for their sample of 631 rapists on probation. Thus, many sex offenders commit violent crimes, but studies have not examined whether the nature of these violent crimes such as intimate partner physical violence increases their risk of sexual recidivism.

Research has also described child molesters' primary motive as sex rather than violence or abuse of power (Freeman, 2007; Porter et al., 2000). Several studies challenge the stereotype view of child molesters as non-violent and assaulting children due to sexual attraction. Research, for example, has found higher rates of excessive physical aggression excluding holding the child down and verbal aggression among incest offenders than among extrafamilial offenders (Stermac et al., 1989). Self-report data indicate that incest offenders do not commit sexual abuse against their children due to objective sexual arousal or confusion between sex and affection but for other reasons such as punishment toward the wife, dissatisfaction with the marriage, and a general pattern of control and domination over the family (Abel et al., 1987; Hanson et al., 1994; Hartley, 2001; Miner & Dwyer, 1997). Although some sex offenders have difficulty forming adult attachments and believe they are showing love to their victims, research assessing incest offenders' self-reports of their motives suggests that anger, a need to dominate, and entitlement sometimes underlie sexual violence (Hartley, 2001). For example, one sex offender stated "I think that part of it was to get back at my wife" (Hartley, 2001, p. 466); thus, there may be a sub-group of sex offenders who are also domestic batterers. Supporting that child molesters also may commit domestic violence acts, research also has found that 15.4% of a small sample of 44 extrafamilial child molesters reported hostility toward women and 11% reported marital discord as part of their precursors for committing sex crimes (Proulx, Perreault & Ouimet, 1999). As this review indicates, studies have compared violent offenders to sex offenders, but have not sufficiently examined the overlap between sex offenders and violent offenders and have not sufficiently examined the group of sex offenders who are also domestic batterers.

*Current Study Informs Two Unresolved Issues in Creating Standardized Risk Assessment Scales*

Over the last couple of decades, much research has accumulated to create more accurate formal standardized risk assessment tools that criminal justice and treatment professionals can use to assess sex offenders' risk of committing additional sexual offenses (see for review Barbaree, Seto, Langton, & Peacock, 2001; Hanson & Morton-Bourgon 2005; Hanson & Morton-Bourgon, 2009). Prior research has examined static, unchanging characteristics such as offense, demographic, substance use and abuse, mental health, and criminal history as predictors of violent and sexual recidivism. Some risk assessment scales also include dynamic predictors such as treatment participation, treatment completion, substance use, violations of conditions of supervision, psychopathic deviance, anger toward authorities, sexual deviance, and sexual deviant attitudes (see Hanson & Morton-Bourgon, 2005). From these empirical studies, several standardized risk assessment scales have been developed. The Rapid Risk Assessment for Sex Offender Recidivism (RRASOR, Hanson, 1997) and STATIC-99 (Hanson & Thornton, 2000) are scales frequently used in probation and parole departments throughout the United States and Canada. Several studies have found that these scales significantly improve the prediction of sexual recidivism (e.g., Barbaree et al., 2001; Hanson & Harris, 2000; Hanson & Morton-Bourgon, 2009). The Structured Anchored Clinical Judgment-Minimum Version (SACJ-Min), the Sex Offender Risk Appraisal Guide (SORAG, Quinsey, Rice & Harris, 1995; Harris et al., 1998), and the STATIC-2002 also have been shown to significantly improve the prediction of sexual recidivism beyond predictions based on probability theory (chance) and are frequently used in practice (Harris et al., 2003; Olver, Wong, Nicholaichuk, & Gordon, 2007; Langton et al., 2007).

A meta-analytical review of 118 studies has concluded that standardized risk assessment scales based on actuarial data have higher predictive validity than clinical judgment in predicting sexual recidivism of sex offenders (Hanson & Morton-Bourgon, 2009). Several studies have now concluded that one risk assessment scale does not offer an advantage over other risk assessment scales (see Barbaree et al., 2001; Langton et al., 2007; Seto, 2005). Other research has found that all standardized scales were significant predictors of sexual recidivism, but

predictive accuracy varied by the amount of missing data allowed in scoring the instrument as well as the length of the follow-up period (Harris et al., 2003; Hanson & Morton-Bourgon, 2009).

The similarity in performance as well as the moderate predictive accuracy of these scales has led researchers to recognize several unresolved issues that need to be addressed to improve the scales' predictive accuracy (for a review of the validity of these instruments see Barbaree et al., 2001; Hanson & Thornton, 2000; Harris et al., 2003; Vrieze & Grove, 2008). The first unresolved issue is whether the predictive accuracy of risk assessment scales would be improved if studies examined specific subgroups of sex offenders and allowed different risk factors to predict sexual recidivism for different subgroups. Researchers have noted that the best predictive scale may vary by offender characteristics (Seto, 2005; Hanson & Bussiere, 1998). Numerous studies have investigated predictors of sexual recidivism, but few studies have examined how risk factors vary across subgroups of sex offenders. The current study examines whether the violent propensity of sex offenders affects the predictive accuracy of standardized risk assessment scales and the predictive accuracy of individual risk factors on sexual recidivism.

Another issue that researchers have raised in the risk assessment literature is that future development of risk assessment scales should incorporate factors that are related to the motives and modus operandi of the sexual offending to further assist in treatment planning (Hanson & Morton-Bourgon, 2009). Knight (1999) suggested that offenders use one of two pathways, sexual deviance or negative masculinity, in committing sex crimes. Sex offenders who are domestic batterers may be more likely to follow Knight's negative masculinity pathway to sexual offending. The negative masculinity pathway suggests that other sex offenders have personality characteristics and attitudes that emphasize hostility and degradation of women; sex crimes are committed because expressions of aggression and hostility are gratifying (Knight, 1999 as cited in Roberts, Doren & Thornton, 2002). The current study examines the extent to which general criminality is sufficient to predict sexual recidivism or whether identification as a domestic batterer also adds predictive accuracy. Though prior research found that general criminality and

sexual deviance were two conceptual dimensions in several standardized risk assessment scales (Roberts et al., 2002), a third dimension that has not been incorporated into most scales is hostility toward women and girls. Theoretically, violence and hostility toward women is a different pathway of sexual offending than general antisocial behavior and criminal offending. One has underlying attitudes that are supported by societal myths and expectations of male dominance, and the other is at the individual level and develops through low self-control and lack of role modeling. One study assessing dynamic predictors of risk (Hanson, Harris, Scott & Helmus, 2007) found that hostility toward women as measured by scales of attitudes was one of seven dynamic predictors that consistently predicted all forms of recidivism.

#### *Purpose of Current Research*

The current study classifies sex offenders based on their violent propensity, and examines a sub-group of sex offenders that has not received sufficient attention: sex offenders who are also domestic batterers of adult intimate partners. This study examines whether the predictive validity of four standardized risk assessment scales, the RRASOR, STATIC-99, STATIC-2002, and SACJ-Min, remains similar for non-violent sex offender sample, a sample of sex offenders who are also domestic batterers, and a sample of sex offenders who commit violent crimes against acquaintances and strangers (other violent sex offenders). Prior research has shown that domestic batterers differ from other violent offenders in the risk factors associated with violent recidivism. For example, research has found that the number of prior arrests for violent crimes was not a significant predictor of violent recidivism for domestic batterers, but was a significant predictor of other violent offenders' violent recidivism (Stalans, Yarnold, Seng, Olson, & Repp., 2004). Based on prior research on types of violent offenders (Stalans et al., 2004), we examine whether offenders' general criminality and the relationship to the victim (family member or non-family member) are significant risk factor of sexual recidivism for all three sub-groups of sex offenders. Based on prior research (Stalans et al., 2004), we predict that domestic batterers will have a higher rate of sexual recidivism than the other two groups.

### *Method*

This chapter focuses only on the total sample of sex offenders released from probation. The probation sample was large enough to examine how sex offenders who were also arrested at some point in time for a non-sexual domestic violence offense (domestic batterers) were different from sex offenders who were had no prior arrests for violent crimes (non-violent offenders) and those who had prior arrests for violent crimes that were not domestic violence (other violent offenders). Another noteworthy characteristic of the total sample is that 20.5% could be classified as a domestic batterer. Offenders were classified as a domestic batterer if they had a prior arrest for a crime of domestic violence or an arrest for a crime of domestic violence after being placed on probation. Thus, the variable of whether offenders were domestic batterers was not used as a predictor of any violent recidivism during or after release from probation supervision. Domestic violence crimes included domestic battery, Aggravated domestic battery, and violation of an order of protection. Most of the offenders had arrests for domestic battery. Offenders who had an arrest for a domestic violence crime battery were coded as 1 and all others were coded as 0. Of the sex offenders classified as domestic batterers, 60.1% had sexually assaulted or abused strangers. Furthermore, 60% of the sex offenders in the total sample had sexually assaulted or abused strangers and 22% had assaulted a family member.

### *Research Design and Sampling*

The research team selected a control sample of 250 convicted male sex offenders on standard probation in Cook County. Each of the 250 offenders was convicted of either aggravated criminal sexual assault, criminal sexual assault, or aggravated criminal sexual abuse against a minor (each of which are felony sex offenses) and was sentenced to a term of standard probation between January 1, 1993 and January 1, 1997. The

team also coded information for 81 offenders in the Adult Sex Offender Program. Most of these offenders (76) had entered the program and had completed an intake interview as of September 30, 1998. The remaining five offenders entered the program after September 30, 1998, but we opted to include them in our sample because we had been receiving monthly treatment reports from their treatment provider. The Cook County standard and specialized samples were comparable on 20 characteristics including prior arrests for violent and sex crimes and scores on the Static-99 and SAC-J-min. The specialized sample, however, was significantly more likely to victimize a family member and to victimize a child under the age of 8 whereas the control sample was significantly more likely to have a prior arrest for any crime and a misdemeanor crime.

In DuPage County, the research team selected control cases from lists of sex offenders on standard probation between January 1993 and June 1996, and all cases sentenced from July of 1997 and May of 1999 were included in the specialized probation sample. There were 110 standard probation cases and 105 cases on specialized probation. The specialized and control samples were found to be similar on the vast majority of the 54 demographic, offense, and risk predictor characteristics examined. The specialized sample, however, included a significantly greater percentage that have committed prior sex crimes, who have more sexual paraphilia, who have a current mental health problem, and who are at higher risk of sexual recidivism based on the SAC-J-min.

In Lake County, the research team coded information for 104 offenders in the specialized sample and 104 offenders in the control sample. All cases that were sentenced between July 1997 and May 1999 were included in the specialized sample. The research team selected control cases from generated lists of sex offenders on standard probation between 1994 and July of 1997. Though similar on 49 characteristics, the Lake County specialized sample was more likely to have at least one prior arrest and one prior conviction whereas the control sample showed somewhat lower socio-economic status and a previous history of mental health treatment combined with greater illicit drug use.

In Winnebago County, the research team coded information for 105 offenders in the specialized sample and 103 offenders in the control sample. All cases that were sentenced between July 1997 and February 2000 or were grandfathered into the specialized program were included in the specialized sample. The research team selected control cases from lists of sex offenders on standard probation between June of 1989 and July of 1997. Cases were randomly selected through selecting every fourth case in an alphabetized list of offenders until the sample size was reached. The specialized and control samples were essentially similar on the 54 demographic, offense and risk characteristics examined.

#### *Characteristics of the Final Sample of 846 Sex Offenders on Probation*

The total probation sample across all four counties is 989; however, of this sample, only 846 sex offenders were included in the analyses. Of the sex offenders excluded from the analyses, 19 sex offenders were deported or fled to Mexico, 3 offenders died, 2 offenders moved to other states, 20 offenders were female, and the criminal history record could not be located for the remainder. We did not include female sex offenders due to the small sample and so that the sample was comparable to our all male sample of sex offenders released from prison. We also did not include sex offenders who were deported, moved to other states or died due to the unreliability and incompleteness of their Illinois Criminal History Record. Probationers ranged in age from 15 to 80 with a mean age of 33.6, (median = 32; sd = 12.4). The majority (52%) were white, non-Hispanic followed by African-Americans (25.1%), Hispanics (20.2% and the remainder composed of Native Americans and Asians/Pacific Islanders and “other” totaling (2.7%). About 47% were never married offenders, 29.7% married, 13.8% divorced and the remainder separated or widowed. Approximately a quarter of the sample (27.6%) had some college education or even obtained an undergraduate degree (45 offenders) or a graduate degree (21 offenders). About 30% had at least completed high school or obtained a GED, and 38.5% had not completed high school.

The majority of the sample was employed either full-time (50.6%) or part-time (18.2%). The annual income of more than half the sample (54.7%) was below \$13,500, and 11.7% earned at least \$30,000.

Data from probation files and criminal history rap sheets were used to score each sex offenders on the Rapid Risk Assessment for Sex Offender Recidivism (RRASOR), the Structured Anchored Clinical Judgment- Minimum Version (SACJ-min), the STATIC-99, and the STATIC-2002.

*Rapid Risk Assessment for Sex Offender Recidivism (RRASOR)*. Hanson (1997) developed the RRASOR based on a meta-analysis of prior research. He selected the risk factors that were most strongly and significantly related to sexual recidivism across the studies. The Rapid Risk Assessment for Sex Offender Recidivism (RRASOR) is the most popular risk assessment tool in the United States and Canada. The RRASOR considers: male victim, unrelated victim, prior sex offenses, and being released from prison (or an inpatient secured institution) before the age of 25. Prior sexual history is given greater weight with one point assigned for one prior conviction or two prior arrests; two points assigned for three prior convictions or three to five prior arrests, and three points assigned for four or more prior convictions or six or more prior arrests. One clear shortcoming of the RRASOR is that it relies on only official criminal history and ignores prior but undetected crimes that are disclosed to probation officers or treatment evaluators. Some research has found that the RRASOR was not a significant predictor of sexual recidivism (See Epperson et al., 1999). Based on the RRASOR, 22% scored 0, 34.5% scored 1, 33.4% scored 2, 8.7% scored 3, and 1.5% scored 4 or 5.

*Structured Anchored Clinical Judgment—Minimum Version (SACJ-MIN)*. The SACJ-MIN has a two-step scoring system. In the first step, five characteristics are scored: any current sexual offense, any prior sexual offense, any current nonsexual violent offense, any prior nonsexual violent offense, and four or more sentencing occasions. If offenders have four or more of these five factors, they are considered high risk. In the second step of the SACJ-MIN, an offender's initial risk assessment is moved one category if he has two or more of the following eight



characteristics: any stranger victims, any male victims, never married, convictions for hands-off sex offenses, substance abuse, placement in residential care as a child, deviant sexual arousal, and psychopathy (Hanson & Thorton, 2000). Based on the SACJ-min, 26.0% are low risk, 49.8% are medium risk, and 24.2% are high risk.

STATIC-99. The Static-99 is a combined scale of the RRASOR and the SACJ-MIN, and has better predictive accuracy than the RRASOR or the SACJ-MIN. Its name indicates that it includes only static variables and that it was developed in 1999. Prior sexual history is scored the same way as in the RRASOR. Each of the following nine risk factors adds one point to the total score: (1) four or more prior sentencing dates; (2) any convictions for non-contact sex offenses; (3) current index nonsexual violent offense; (4) prior nonsexual violence arrests; (5) any unrelated victims; (6) any stranger victims; (7) any male victims; (8) being between the age of 18 to 24 at the time of arrest; and (9) never lived with lover for at least two years. Scores can range from 0 to 12, with a score of 6 or more in the high-risk category (Hanson & Thorton, 2000). Based on the Static-99, 26.3% are low risk, 36% are medium-low risk, 32.6% are medium high risk and 5.1% are high risk

The scores on the Static-2002 ranged from 2 to 11 with 20.2% having a score of 2, 3, or 4, and 33.2% having a score of 8 or higher, with an average score of 6.36 (median = 7.0; stddev = 1.94). The scores on the subscale of sexual perversion on the Static-2002 risk assessment had an average of 1.58 (median = 2; stddev = .85).

In addition to the demographic and social characteristics, offense and criminal history attributes were tested as predictors of sexual and violent recidivism For the sex crime that placed the offenders on probation, almost half (47%) of the offenders were convicted of aggravated criminal sexual abuse, 18.9% were convicted of criminal sexual assault, 1 offender was convicted of aggravated criminal sexual assault, 12.2% were convicted of pornography, 9.6% were convicted of criminal sexual abuse or indecent solicitation, and 11.7% were convicted of public indecency. A little over half of the sample had penetrated the victim either orally, vaginally, or anally, and slightly over half had sexually assaulted

a person aged 13 or older. One quarter of the sex offenders had used physical force in the commission of the sex crime. Of the sex offenders, 5.8% were gang members. About 60% had a prior arrest for at least one crime and almost one quarter had four or more prior arrests for any type of crime. About one-third of the sex offenders had a prior arrest for a violent crime, and 18% had a prior arrest for a sex crime.

### *Results*

The analyses are divided into three sections. The first section uses chi-square analyses to compare non-violent sex offenders, domestic batterer sex offenders, and other violent sex offenders on offense, criminal history, mental health, and treatment characteristics. Due to the number of statistical tests conducted, we have used a Bonferroni adjustment and have labeled findings as significant if they have a probability level of .001 or less. This adjustment insures that the alpha level of .05 is not inflated.

Table 6.1 provides the comparison of non-violent sex offenders, other violent sex offenders, and domestic batterers on the characteristics of the sex crimes that led to their current conviction and sentence of probation. As shown in Table 6.1, these three groups of sex offenders were similar in the type of sex crimes committed and the nature of these sex crimes. About half of each group were placed on probation for aggravated criminal sexual abuse, and had not penetrated the victim's private areas. At least 70% of each group had victimized a stranger or acquaintance and a female victim. Moreover, at least two thirds of the sex offenders had victimized a person who was age 13 or older, and less than 10% of each

Table 6.1. Comparing Sex Offenders Who are Non-violent, Other Violent or Domestic Batterers on Their Current Sex Crime

	Type of Sex Offender			
	Non-Violent	Other Violent	Domestic Batterer	
<i>Current Convicted Offense</i>				
Criminal Sexual Assault	18.0%	20.5%	19.5%	$X^2 = 18.33, p < .01$
Aggravated Criminal Sexual Abuse	45.6%	55.1%	40.8%	
Indecent Solicitation/Criminal Sexual Abuse	10.7%	4.9%	15.5%	
Public Indecency	14.3%	7.8%	12.1%	
Victim was Stranger or Acquaintance	70.7%	77.6%	72.1%	$X^2 = 3.28, p < .19$
Female Victim	81.3%	79.0%	89.7%	$X^2 = 10.82, p < .03$
Any Male Victim	18.7%	21.0%	10.2%	
No Penetration	48.9%	40.0%	44.3%	
Anal Penetration	13.7%	22.0%	10.9%	
Vaginal Penetration	24.7%	27.3%	32.2%	
<i>Age of Victim</i>				
Under 6	7.7%	6.3%	9.2%	$X^2 = 11.29, p < .19$
6 to 9	14.6%	12.2%	12.6%	
10 to 12	16.3%	10.7%	15.5%	
13 to 17	52.2%	61.0%	48.3%	
18 and over	9.2%	9.8%	14.4%	
<i>Total Number of Counts on Original Indictment</i>				
One	35.1%	34.5%	32.7%	$X^2 = 10.87, p < .55$
Two or three	35.6%	27.0%	35.3%	
Eleven or Higher	8.4%	7.5%	7.1%	
<i>Type of Count on Original Indictment</i>				
Force used to achieve sex offense	12.1%	17.8%	11.7%	$X^2 = 3.94, p < .14$
Aggravated Criminal Sexual Assault	16.0%	19.0%	18.2%	$X^2 = .86, p < .65$
Unlawful Restraint	11.9%	14.4%	9.7%	$X^2 = 1.67, p < .43$

group had victimized a child under 6. On the original indictment, about one third of the offenders had only one charge, one third were charged with two or three sex crimes, about 7% were charged with 11 or more sex crimes, and the remainder had between 4 to 10 sex crimes.

Table 6.2 compares the three groups of sex offenders on criminal history measures. As shown in Table 6.2, the majority of sex offenders who were labeled as not violent did not have any prior arrests for non-felony property crimes (91.1%), felony property crimes (87.8%) and had only been sentenced for their current offense (86.1%) whereas other violent sex offenders and domestic batterers were significantly more likely to have prior arrests for property crimes and additional sentencing hearings. At least one-third of the domestic batterers and 44% of the other violent sex offenders had prior arrests for non-felony and felony property crimes; prior research has shown that prior arrests for property crime increase the risk of sexual recidivism. When comparing prior arrests for any type of crime, 40% of non-violent sex offenders, 91% of other violent sex offenders, and 76% of domestic batterers had at least one prior arrest. Moreover, about 28% of other violent and domestic batterer sex offenders compared to only 2.6% of non-violent sex offenders had eight or more previous arrests of some kind. Non-violent sex offenders were also more likely to not have been arrested for prior drug charges (96%) than both domestic batterer sex offenders (83%) and other violent sex offenders (81%). Whereas only 2.6% of sex offenders who were not violent had 4 or more sentencing dates, 12.7% of other violent offenders and 14.4% of domestic batterers had 4 or more sentencing dates. Thus, the other violent sex offenders and the domestic batterers had similar criminal histories, and had significantly more diverse and pervasive criminal histories.

Table 6.2 Comparison of the Three Types of Offenders on Criminal History

<b>Variables</b>	<b>Not a Violent Offender</b>	<b>Other Violent Offender</b>	<b>Domestic Batterer</b>	<b>Chi-Square Value</b>
Used alcohol/drugs before sex crime	20.9%	31.9%	35.5%	$X^2 = 15.68, p < .0001$
<i>Prior Arrests for Any Crime</i>				
0	59.9%	8.8%	23.6%	$X^2 = 251.8, p < .0001$
1	13.5%	12.2%	15.5%	
2	9.9%	14.1%	6.9%	
3	6.9%	12.7%	9.2%	
4 and 5	4.9%	15.1%	9.1%	
6 and 7	2.4%	9.3%	6.9%	
8 or more	2.6%	27.8%	28.7%	
<i>Prior Arrests for Drug Charges</i>				
0	95.7%	83.2%	81.0%	$X^2 = 40.84, p < .0001$
1	2.4%	10.2%	12.1%	
2 or more	2.0%	6.6%	6.9%	
<i>Prior Arrests for Property Crimes other than Felonies</i>				
0	91.1%	55.8%	64.2%	$X^2 = 121.1, p < .0001$
1	6.1%	24.9%	20.2%	
2 or more	2.8%	19.3%	15.6%	
<i>Prior Arrests for Burglary, Grand Larceny and Auto Theft</i>				
0	87.8%	56.6%	68.4%	$X^2 = 96.999, p < .0001$
1	8.4%	20.5%	13.8%	
2	2.4%	10.2%	4.6%	
3 or more	1.5%	12.7%	13.2%	
<i>Sentencing Dates</i>				
1	86.1%	66.8%	73.0%	$X^2 = 52.25, p < .0001$
2	9.4%	14.6%	9.8%	
3	1.9%	5.9%	2.9%	
4 and more	2.6%	12.7%	14.4%	

Table 6.3 compares the three types of sex offenders on mental health, substance abuse and treatment characteristics. As is shown in table 6.3, domestic batterer sex offenders (18%) had a higher preference for sadistic sexual behavior than both non-violent sex offenders (9%) and other violent offenders (3.9%). Domestic batterers were also more likely to use illicit drugs and have received prior treatment for substance abuse than all other offenders. Sixty percent of domestic batterer sex offenders used illicit drugs whereas only 54 percent of other violent sex offenders and 40 percent of non-violent sex offenders chose these same practices. Thirty percent of domestic batterer sex offenders have had prior substance abuse treatment where only 22 percent of other violent sex offenders and just 15 percent of non violent sex offenders have had the same. While on probation supervision, 72% of non-violent sex offenders compared to 55% of other violent offenders and 45% of domestic batterers satisfactorily completed the ordered treatment. As rated by the probation officers, about 38 percent of both types of violent offenders received responsive ratings. This rating was higher at 55 percent, for the non-violent offenders. The offenders receiving the highest ratings for being unresponsive to treatment were the domestic batterers (49%) followed by the other violent sex offenders (38%) and the non-violent sex offenders (29%). About half of the domestic batterers (56%) and other violent offenders (48%) compared to one-third of the non-violent offenders received at least one violation of their probation during their supervision. All of this data shows that non violent sex offenders are more compliant with treatment ordered during probation supervision than both types of violent offenders.

Table 6.3 Mental Health, Treatment, and Substance Abuse

<b>Variables</b>	<b>Not a Violent Offender</b>	<b>Other Violent Offender</b>	<b>Domestic Batterer</b>	<b>Chi-Square Value</b>
<i>Mental Health</i>				
Psychopathic deviancy	4.5%	1.5%	9.2%	$X^2 = 12.62, p < .002$
Prefers Sadistic Behavior/Sex	9.0%	3.9%	18.4%	$X^2 = 23.15, p < .0001$
<i>Treatment</i>				
Complete Satisfactorily	71.6%	55.2%	44.8%	$X^2 = 36.22, p < .0001$
Responsive Ratings	54.7	38.1%	37.8%	
Unresponsive Ratings	28.8%	37.6%	49.4%	
<i>VOP Filed For Treatment Noncompliance</i>				
Not Ordered	16.5%	24.4%	12.8%	$X^2 = 42.721, p < .0001$
Zero VOP	66.8%	51.6%	44.2%	
One VOP	28.0%	38.4%	46.8%	
Two VOP	5.2%	10.1%	9.0%	$X^2 = 29.007, p < .0001$
<i>Substance Abuse</i>				
Illicit Drug Use	40.3%	54.2%	60.2%	$X^2 = 24.12, p < .0001$
Prior Treatment	14.9%	22.2%	30.4%	$X^2 = 18.52, p < .0001$

Table 6.4 shows a comparison of all three types of sex offender’s recidivism during and after an offenders release from probation. While under probation supervision, 26% of non-violent sex offenders, 44% of other violent sex offenders, and 66% of domestic batterers were arrested for a new charge. After being released from supervision, domestic batterers were more likely to recidivate with a sex crime (19%), a serious sex crime (15%), and for possessing and selling drugs (17%) than both other types of offenders. Review of prior studies has found that the average rate of sexual recidivism for a five to six year follow-up period is 13.4% (Hanson & Morton-Bourgon, 2005). The rate of sexual recidivism that included public indecency charges while on probation supervision is much higher than the average across prior studies. Moreover, the rate for

domestic batterers is slightly higher than the average across studies for both any sexual recidivism and serious sexual recidivism after release whereas the other two groups have slightly lower rates than the average. These findings suggest that prior research should make distinctions between domestic batterer sex offenders, other violent sex offenders, and non-violent sex offender. Non-violent sex offenders recidivated at a rate of 8% or less on all of these charges after being released from probation while other violent offenders recidivated at a rate less than 13% on all of these charges after being released from probation. According to this data, domestic batterers after release from supervision are more likely to recidivate than other violent sex offenders and non-violent sex offenders. However, during probation supervision, domestic batterers (26.4%) and non-violent sex offenders (20.6%) had similar arrest rates for sex crimes.

Table 6.4 Recidivism Measures: A comparison across Type of Sex Offender

<b>Variables</b>	<b>Not a Violent Offender</b>	<b>Other Violent Offender</b>	<b>Domestic Batterer</b>	<b>Chi-square Value</b>
<i>After Release from Probation</i>				
Sex crime	7.9%	11.2%	19.0%	$X^2 = 15.81, p < .0001$
Serious Sex Crime	4.7%	8.3%	15.2%	$X^2 = 13.88, p < .001$
Drug Selling or Possession	4.5%	12.2%	17.2%	$X^2 = 28.60, p < .0001$
<i>During Probation Supervision</i>				
Any New Arrest	26.2%	44.1%	65.5%	$X^2 = 85.74, p < .0001$
Sex Crime	20.6%	15.1%	26.4%	$X^2 = 7.41, p < .025$

Table 6.5 compares the non-violent, other violent, and domestic batterer sex offenders' scores on standardized risk assessment scales. The three types of offenders had similar scores on the Static-99 with about one-third categorized as medium-low risk, one-third categorized as medium high risk, and less than 9% categorized as high risk. As shown in Table 6.5, similar scores across these types of offenders were also evident on the Static-2002. When compared on the General Criminality Scale of the Static02, the majority of the other violent offenders (67%)



and the domestic batterers (62%) scored at a 3 or higher where the majority of the non-violent sex offenders (84%) scored at a 2 or lower. On the Persistent Sexual Deviance Scale of the Static02, the majority of all offenders scored at a 2 or higher while 30% of the other violent offenders and 23% of the domestic batterers scored a 0. Only 5% of non violent offenders scored at the 0 level. Nearly half of all the sex offenders scored at the Medium Risk level on the final SACJ-min categories. However, on the SACJ-min, other violent offenders (42%) and domestic batterers (39.7%) had a greater number of offenders test at the High Risk level than the non-violent sex offenders (11%). On all of these scales, domestic batterers and other violent offenders received similar risk scores. Non-violent sex offenders have a higher rate of persistent sexual deviance and lower levels of general criminality according to the Static02.

*Univariate ODA Analysis: Comparing the Three Types of Offenders*

Table 6.6 presents the significant and generalizable predictors of sexual recidivism for each type of offender. Column one presents the subgroup of offenders for a predictor that indicates a higher risk of sexual recidivism. In columns two and three the results for non-violent sex offenders are presented. In the fourth and fifth columns the results for other violent sex offenders are presented. In the sixth and seventh column the results for domestic batterers are presented. The comparison of significant predictors for domestic batterers and non-domestic batterers in Table 6.6 revealed several common risk factors. As shown in Table 6.6, only five measures significantly predicted sexual recidivism while on probation for other violent offenders whereas there were ten significant predictors for domestic batterers and nine significant predictors for non-violent sex offenders. Treatment compliance was the strongest predictors of sexual recidivism across all three subgroups of sex offenders. All three measures of treatment compliance were significant and generalizable predictors of any sex crimes while under probation supervision for non-violent offenders, and two of the three measures of treatment were significant and generalizable for domestic batterers and other violent offenders. Sex offenders who were rated as unresponsive by treatment providers or were terminated prematurely from treatment had a significantly higher

Table 6.5. Standardized Risk Assessment Scales

<b>Variables</b>	<b>Not a Violent Offender</b>	<b>Other Violent Offender</b>	<b>Domestic Batterer</b>	<b>Chi-Square Value</b>
<i>Risk Categories for Static 99</i>				
Low Risk	29.3%	20.0%	24.7%	$X^2 = 18.616, p < .005$
Medium-Low Risk	37.5%	37.1%	31.6%	
Medium-High Risk	30.4%	35.1%	35.6%	
High Risk	2.8%	7.8%	8.0%	
<i>Static 2002 Scale</i>				
0 to 3	9.6%	8.8%	6.9%	$X^2 = 13.71, p < .09$
4 to 5	26.3%	26.8%	18.4%	
6	13.3%	18.0%	12.6%	
7	20.3%	15.1%	31.2%	
8 to 14	30.4%	24.1%	37.9%	
<i>Static 02</i>				
<i>Persistent Sexual Deviance Scale</i>				
0	4.7%	29.8%	23.0%	$X^2 = 101.3, p < .0001$
1	25.5%	20.0%	10.3%	
2	64.0%	43.9%	55.7%	
3 and above (3 and 4)	5.8%	6.3%	10.9%	
<i>General Criminality Scale</i>				
0 or 1	38.8%	1.0%	6.9%	$X^2 = 235.5, p < .0001$
Score of 2	42.4%	32.7%	31.0%	
Score of 3	16.9%	54.6%	47.7%	
Score of 4 or higher	1.9%	11.7%	14.4%	
<i>Final Sacj Categories</i>				
Low Risk	37.9%	6.8%	15.5%	$X^2 = 145.0, p < .0001$
Medium Risk	51.6%	50.7%	44.8%	
High Risk	10.5%	42.4%	39.7%	

risk of sexual recidivism. However, other violent sex offenders also had a significantly higher risk if they were court-mandated to participate in treatment whereas for domestic batterers those who were not court mandated had a lower risk. Sex offenders who were unsatisfactorily discharged from treatment also had a significantly higher risk of sexual recidivism. risk of sexual recidivism. However, other violent sex offenders also had a significantly higher risk if they were court-mandated to participate in treatment whereas for domestic batterers those who were not court mandated had a lower risk. Sex offenders who were unsatisfactorily discharged from treatment also had a significantly higher risk of sexual recidivism.

Table 6.6 also shows that domestic batterers compared to the other subgroups had three unique risk factors, two of which were assessing sexual deviancy. Domestic batterers were at a higher risk of sexual recidivism if they had an objective sexual arousal to children as measured by the ABEL. Conversely, objective sexual arousal toward children was not a significant risk factor for non-domestic batterers. Similarly, domestic batterers had a significantly higher risk of sexual recidivism if probation officers rated them as having chronic sexual deviancy problems, but this information did not increase the accuracy of predicting non-domestic batterer sex offenders' risk of sexual recidivism. Domestic batterers also were at a higher risk if they were psychopathic deviants as measured by the Minnesota Multiphasic Personality Inventory (MMPI). These measures were not significant predictors of sexual recidivism while under probation supervision for the non-violent sex offenders or the other violent sex offenders. Table 6.6 also shows that non-violent sex offenders and domestic batterers were at a significantly higher risk of sexual recidivism if they had an interest in hands off sexual offending or had a current serious mental illness. Thus, probation supervision was less likely to deter sex offenders with a serious mental illness or sex offenders who had sexual deviancy problems and were domestic batterers. Only non-violent sex offenders were at a higher risk of sexual offending if the sex crime for which they were placed on probation involved a stranger or acquaintance.

Table 6.6. Comparing Three Types of Offenders: Significant and Generalizable Predictors of Sexual Recidivism While on Probation

Attribute Predictor of value of 1	Non-violent		Other Violent		Domestic Batterer	
	p-value	ESS	p-value	ESS	p-value	ESS
<i>Treatment Compliance</i>						
Random Intensive Surveillance	.0001	30.40	.001	32.65	.007	24.24
Unresponsive to Treatment	.0001	20.50	.009	30.39	.010	27.50
At Least One VOP for Treatment Noncompliance	.0001	24.21	.0001	36.59	.015	23.62 (19.16)
Unsatisfactorily Discharged from Treatment	.0001	23.73			.016	25.13
Court-ordered to Refrain from Contacts with Minors			.037	10.03		
Court-ordered to Participate in Sex Offender Treatment			.019	22.60		
<i>Sexual and Mental Illness Attributes</i>						
Prior Acts or Interest in Hands-off Sexual Offending	.0001	20.34			.0001	34.04
At Least One Prior Arrest for a Sex Offense	.019	10.17				
At least One Prior Arrest for Hands-off Sex Crime	.012	6.64	.03	11.88	.018	11.92
Chronic Sexual Deviancy Problems					.011	27.03
Objective Sexual Arousal to Children					.018	17.17
Current Serious Mental Illness	.01	14.42			.011	23.07
Psychopathic Deviant					.002	17.05
<i>Offense Characteristics</i>						
Victim is a Stranger or Acquaintance	.005	15.49				
Victim is a Stranger	.003	18.74				
<i>Substance Use</i>						
Reported Alcohol Use at Probation Intake	.016	14.32			.005	21.50
Prior Treatment for Substance Abuse	.029	9.54				

ESS = Effect Strength of Sensivity; ESS in parentheses is for Effect Strength of Sensitivity in Leave-one-out validity analysis if different from the first ESS.

Table 6.7 shows the performance of the standardized risk assessment scales at predicting sexual recidivism while under probation supervision. The top half of Table 6.7 shows the ESS and p-values from the Uni-ODA analyses.

Table 6.7 Risk Assessment Scales and Sexual Recidivism While on Probation: Comparing Three Types of Sex Offenders

Predictors from Uni-ODA Analyses	Non-Violent		Other Violent		Domestic Batters	
	P-value	ESS	p-value	ESS	p-value	ESS
<i>Risk Assessment Scales</i>						
RASSOR						
Static02 = > 8.5; For Not DB Static-02 = >6.5	.0001	26.50 (26.11)	.0001	32.81	.009	24.46
Static-99 medium or high risk	.003	17.23	.059	19.76 (-3.54)	.313	11.55
High risk on Sacj-min For Domestic batterer = medium or high risk	.005	15.64	.029	22.21	.041	18.14 (5.20)
General criminality scale of Static 2002 is 3 or higher	.0001	26.50	.003	28.23 (5.21)	.085	16.10 (4.11)
ROC Analyses	p-value	AUC (95% CI)	p-value	AUC (95% CI)	p-value	AUC (95% CI)
<i>Risk Assessment Scales</i>						
STATIC-99	.001	.61 (.54 to .67)	.08	.60 (.50 to .70)	.40	.54 (.44 to .64)
STATIC-2002	.0001	.68 (.62 to .74)	.001	.70 (.60 to .79)	.05	.60 (.50 to .70)
SACJ-min	.001	.61 (.54 to .68)	.04	.62 (.51 to .78)	.12	.58 (.49 to .67)
RASSOR	.002	.61 (.54 to .67)	.09	.60 (.50 to .70)	.70	.52 (.42 to .62)

ESS = Effect Strength of Sensivity; ESS in parentheses is for Effect Strength of Sensitivity in the Leave-one-out validity analysis when it is different from the first ESS.

The bottom half of Table 6.7 shows the Area Under the Curve (AUC) coefficients and 95% confidence intervals for the AUC coefficients for the risk assessment scales. As shown in Table 6.7, all four risk assessment scales had moderate significant performance at predicting sexual recidivism while under probation for non-violent sex offenders. Moreover, only STATIC-2002 was a significant predictor of sexual recidivism for all three subgroups of sex offenders.

Table 6.8 shows a comparison of non-violent, other violent, and domestic batterer sex offenders on serious sexual recidivism after an offender has been released from probation. As shown in Table 6.8, the only predictor of recidivism that was significant or approached significance ( $p < .10$ ) and generalizable for all three groups of offenders is not completing treatment satisfactorily. Both non-violent and domestic batterer sex offenders have the significant predictor of offending against strangers or acquaintances.

As shown in Table 6.8, each type of offender has unique significant and generalizable predictors for serious sexual recidivism after release from probation. Non-violent sex offenders show the unique predictors of being in Cook or Lake County (ESS=32.21%). Other violent sex offenders show the unique predictors for serious sexual recidivism of being African American (ESS=33.69%), being unresponsive to treatment (ESS=39.17%), and currently going through substance abuse treatment (.019, ESS=26.52%). Domestic batterer sex offenders did not have any unique predictors.

Table 6.8. Comparison of Offender Types on Predictors of Serious Sexual Recidivism

Attribute Predictor of Value 1	Non Violent N = 467		Other Violent N = 205		Domestic Batterer N = 174	
	Estimated <i>p-value</i>	ESS	Estimated <i>p-value</i>	ESS	Estimated <i>p-value</i>	ESS
Did Not Complete Treatment Satisfactorily	.099	19.54%	.010	33.70%	.082	21.26
Unresponsive to Treatment			.006	39.17%		
Probation is Revoked	.054	13.29%	.007	28.97%		
Victim is 13-17 Years Old	.078	21.37%				
Extrafamilial Offender	.059	18.87%			.046	21.12%
Lake or Cook County	.008	32.21%				
Offender is a Psychopathic Deviant	.069	9.59%				
Offender is Going Through Substance Abuse Treatment			.019	26.52%		
Offender is African American			.021	33.69%		

Table 6.9 shows a comparison of non-violent, other violent, and domestic batterer sex offenders on any sexual recidivism after an offender's release from probation. As shown in Table 6.9, the only predictor that is significant and generalizable for all three types of offenders is having committed or fantasized about handsoff sex offenses such as exhibitionism or voyeurism. Other violent and domestic batter sex offenders shared the common recidivism predictor of not completing treatment satisfactorily. Domestic batterer sex offenders in Lake or Dupage County (.020, ESS=26.43%) show a greater risk of any sexual recidivism after release from probation; both of these counties have more police surveillance for sex offenders with searches taking place in DuPage County woods and more coordination with the courts in Lake County. For non-violent and domestic batterer sex offenders, there also are three offense characteristics that predict any sexual recidivism.

Table 6.9 also shows unique predictors of any sexual recidivism after release from probation for other violent and domestic batterer sex offenders. Other violent sex offenders have an increased chance of any sexual recidivism after release if they are unresponsive to treatment, have an income of \$13,500 or less, and are in substance abuse treatment. Unique predictors of any sexual recidivism for domestic batterer sex offenders include no form of penetration, and the offender being a stranger to the victim, and the offender having a mental illness.

Table 6.9. Comparing Non-violent, Other Violent, and Domestic Batterer Sex Offenders on Any Sexual Recidivism After Release from Probation

Attribute Predictor of Value 1	Non Violent N = 467		Other Violent N = 205		Domestic Batterer N = 174	
	<i>P-value</i>	<i>ESS</i>	<i>P-value</i>	<i>ESS</i>	<i>P-value</i>	<i>ESS</i>
Did Not Complete Treatment Satisfactorily			.013	28.96%	.021	24.57%
Offender is Unresponsive to Treatment			.019	31.25%		
Offender Committed or Fantasized About Handsoff Offenses	.013	21.06%	.069	17.66%	.083	16.18%
At Least One Prior Arrest for Handsoff Sex Crimes	.001	14.97%			.049	11.80%
<i>Current Offense Characteristics</i>						
At Least One Count for Crimes Not Covered Above	.051	18.16%			.024	23.01%
Offender is a Stranger to the Victim.					.010	30.41%
Extrafamilial Offender in Current Offense	.006	23.08%			.020	22.96%
Extrafamilial Offender Based on Indictment	.002	21.52%			.010	24.55%
Original Indictment Includes Other Types of Crimes	.041	18.16%			.020	23.01%
No Form of Penetration Occurred					.036	24.03%
<i>Offender Characteristics</i>						
Offender has a Mental Illness					.014	24.35%
Income of \$13,500 or Less			.038	29.11%		
Offender in Substance Abuse Treatment			.017	23.37%		
Lake or Dupage County for DB Lake or Winnebago County for OV			.089	23.51%	.020	26.43%



Table 6.10 presents the unique significant and generalizable predictors of any sexual recidivism after release from probation for non-violent sex offenders. As Table 6.10 shows, non-violent sex offenders show several unique significant and generalizable prior criminal history predictors of any sexual recidivism. These offenders also show two unique offense characteristics: the offender does not use drugs or alcohol before committing a sex crime, and the current offense is public indecency. In addition, offenders who are psychopathic deviants have a significantly higher chance of any sexual recidivism after release from probation.

Table 6.10. Unique Significant and Generalizable Predictors of Any Sexual Recidivism After Release from Probation for Non-Violent Sex Offenders

<b>Stable and Significant Predictors for Non-Violent Sex Offenders</b>	<b>p-value</b>	<b>ESS</b>
<i>Prior Criminal History</i>		
At Least One Prior Arrest for All Sex Offenses	.023	15.04%
At Least One Prior Arrest for Sex Crimes	.021	15.04%
At Least One Prior Arrest for Any Crime	.054	18.06%
At Least One Arrest for Other Misdemeanors	.007	18.49%
At Least Two Total Convictions	.032	12.09%
At Least Two Convictions for Sex Crimes	.017	10.49%
One Prior Incarceration	.007	12.12%
<i>Offense Characteristics</i>		
Offender does not use drugs or alcohol before committing a sex crime	.039	16.10%
Current offense is public indecency	.004	28.45%
Offender is a psychopathic deviant	.021	9.79%
<i>Risk Assessment Scales</i>		
A score of 1.5 or greater on the RASSOR scale.	.020	21.46%
Medium or High score on the initial categories of the Sacjmin after step 1.	.024	14.85%
Score of 2.5 or greater on the general criminality scale of the Static02.	.041	17.69%
A score of 2.5 or higher on the General Criminality Scale of Static02 (Gencrim2)	.031	17.69%
Rassor2 > 1.5	.014	21.46%

As shown in Table 6.10, non-violent sex offenders also show unique predictors of any sexual recidivism on the different risk assessment scales. These offenders show a score of 1.5 or greater on the RASSOR scale (.020, ESS=21.46%), a medium or high score on the initial categories of the Sacjmin after step 1 (.024, ESS=14.85%), a score of 2.5 or greater on the general criminality scale of the Static02 (.041, ESS=17.69), and a score of 2.5 or greater on the general criminality scale of the Static02 (.031,ESS=17.69%).

Table 6.11 presents a comparison of the different risk assessment scales on their ability to predict any sexual recidivism for non-violent, other violent, and domestic batterer sex offenders. The top half of Table 6.11 presents the Uni-ODA analyses whereas the bottom half provides the area under the curve (AUC) coefficients from the ROC analyses. As shown in Table 6.11, the Uni-ODA analyses revealed that the STATIC-2002 scale was a significant predictor of any sexual recidivism for all three types of offenders. However, for non-violent sex offenders and domestic batterers, the LOO analysis revealed slight shrinkage in the ESS, and significant AUC coefficients of .66 and .68. For the other violent offenders, the shrinkage in the LOO analysis was more substantial with an original ESS of 21.26% and an ESS in the LOO of only 8.52%; moreover, the ROC analysis predicting any sexual recidivism of other violent offenders found that the AUC was not significant. Table 6.11 reveals that all standardized risk assessment instruments were significant predictors of any sexual recidivism for non-violent offenders, and performed at a similar level as measured by the AUC coefficients. Moreover, Table 6.11 shows that none of the risk assessment instruments predicted the sexual recidivism of other violent sex offenders.

Table 6.11. Prediction of Any Sexual Recidivism After Release from Probation: Use of Standardized Risk Assessment Scales

	Non-violent Sex Offenders		Other Violent Sex Offenders		Domestic Batterer Sex Offenders	
	p-value	ESS <sup>1</sup>	p-value	ESS	p-value	ESS
<b>UniODA Analyses</b>						
Medium or High Risk Static99	.03	20.12% (16.79%)	.54	10.42% (10%)	.026	23.02 (-33.60)
Static 2002 score > 6.5	.004	27.07% (22.75%)	.11	21.26% (8.52%)	.006	28.11% (24.24%)
General Criminality Scale of Static02	.04	17.69%	.11	18.32 (8.17)	.463	9.41% (4.71)
Medium or High risk on SACJ-min	.0001	26.49% (15.02%)	.55	6.14%	.12	15.41% (7.16%)
RASSOR > 1.5	.02	9.79%	.74	8.22% (-6.69%)	.09	18.05% (4.32%)
<b>ROC Analyses</b>	p-value	AUC <sup>2</sup> (95% CI) <sup>3</sup>	p-value	AUC (95% CI)	p-value	AUC (95% CI)
STATIC-99	.005	.63 (.53 to .72)	.33	.56 (.44 to .68)	.02	.63 (.53 to .72)
STATIC-2002	.001	.66 (.59 to .74)	.06	.62 (.50 to .73)	.001	.68 (.59 to .78)
SACJ-min	.001	.67 (.59 to .76)	.10	.61 (.48 to .73)	.17	.58 (.48 to .68)
RASSOR	.001	.67 (.58 to .76)	.70	.53 (.40 to .65)	.12	.59 (.49 to .69)

<sup>1</sup>ESS is effect strength of sensitivity, which means the percentage of classification accuracy explained by the predictor beyond that accounted for by chance; <sup>2</sup>AUC is area under the curve.; <sup>3</sup> CI means 95% confidence interval for the area under the curve, and if it contains .50 then assessment scales do not perform above chance level.

Table 6.12 presents a comparison of the different risk assessment scales on their ability to predict serious sexual recidivism for non-violent, other violent, and domestic batterer sex offenders.

Table 6.12. Performance of Risk Assessment Scales on Predicting Serious Sexual Recidivism After Release from Probation:  
Comparing Three Types of Offenders

	Non-violent Sex Offenders		Other Violent Sex Offenders		Domestic Batterer Sex Offenders	
Uni-ODA Analyses	p-value	ESS	p-value	ESS	p-value	ESS
Medium or High Risk Static99	.26	18.29% 6.25%	1.0	2.57 (-1.91)	.15	18.46 (14.80)
Static 2002 score > 6.5	.26	18.29% (18.07%)	.75	9.36 (-.5)	.07	23.67 (16.41%)
General Criminality Scale of Static02 > 1.5	.025	26.30% (18.39%)	.008	30.29% (-6.35%)	.28	13.65% (3.48%)
Medium or High risk on SACJ-min	.20	15.92% (-6.24%)	.51	11.45%	.34	12.87 (-.60)
RASSOR > 1.5	.06	22.29%	.89	6.88 (2.38%)	.30 > .5	13.82 (5.10)
ROC Analyses	p-value	AUC (95% CI)	p-value	AUC (95% CI)	p-value	AUC (95% CI)
STATIC-99	.47	.55 (.43 to .66)	.96	.50 (.36 to .64)	.15	.59 (.48 to .70)
STATIC-2002	.17	.59 (.48 to .69)	.26	.58 (.45 to .72)	.03	.64 (.53 to .75)
SACJ-min	.41	.55 (.44 to .66)	.44	.56 (.41 to .70)	.58	.54 (.42 to .65)
RASSOR	.07	.62 (.51 to .72)	.97	.50 (.36 to .63)	.15	.59 (.48 to .71)

As shown in Table 6.12, none of the risk assessment scales were significant and generalizable in the prediction of serious sexual recidivism for any of the offender types. The ROC analysis shows that the only significant AUC was for STATIC-2002 predicting serious sexual recidivism after release from probation for the domestic batterer sex offenders.

Table 6.13 presents the logistic regression models predicting any sexual recidivism and serious sexual recidivism after release from probation. As shown in Table 6.13, the domestic batterers and other violent offenders compared to non-violent sex offenders were significantly more likely to commit any sexual recidivism and serious sexual recidivism after release from probation even after the effects of psychopathic deviancy, noncompliance with treatment, interest in hands off sexual offending, extrafamilial victims, and general criminality were removed. Interest in hands off sexual offending and unsatisfactory completion of treatment were significant risk factors for all types of sex offenders. Moreover, Table 6.13 shows two significant interaction terms. First, victimization of acquaintances or strangers was only a high risk factor for domestic batterers and non-violent sex offenders; extrafamilial victims did not predict the sexual recidivism of other violent sex offenders. Second, the general criminality scale of the Static-2002 was a significant risk factor for sexual recidivism of other violent sex offenders and non-violent sex offenders; the general criminality scale did not predict the sexual recidivism of domestic batterers. This finding is consistent with Stalans et al., (2004) prior research that found that criminal history was not a significant predictor of violent recidivism for domestic batterers, but was a significant predictor for other violent offenders.

Table 6.13 Logistic Regressions Predicting Sexual Recidivism After Release From Probation

Predictors	Sexual Recidivism After Release From Probation		Serious Sexual Recidivism After Release	
	B (odds Ratio)	p-value	B (odds Ratio)	p-value
Other Violent Offender (1) vs. Non-violent (0)	2.67 (14.1: 1)	.004	2.25 (9.47:1)	.014
Domestic Batterers (1) vs. Non-violent (0)	2.38 (10.79:1)	.019	3.26 (26.11: 1)	.007
Psychopathic Deviant	.79 (2.21: 1)	.087	.93 (2.53: 1)	.074
Interest in Handsoff Sexual Offending	.84 (2.31:1)	.003	.84 (2.31:1)	.01
Unsatisfactory Completion of Sex Offender Treatment	1.00 (2.73:1)	.001	.86 (2.36:1)	.01
<i>Interactions</i>				
Other Violent Offenders Victimized Strangers or Acquaintances	-.61 (.54: 1)	.31	.92 (2.50:1)	.14
Non-violent or Domestic Batterer Offender Victimized Strangers or Acquaintances	2.90 (18.1:1)	.003	2.57 (13.01:1)	.009
<i>General Criminality Scale of Static-2002</i>				
With Other Violent or Non-violent Offenders	.74 (2.09:1)	.049	1.05 (2.84:1)	.02
With Domestic Batterer Sex Offenders	-.34 (.72)	.29	-.33 (.72)	.38
Model Chi-square	59.64		44.28	
Degrees of Freedom	9		9	
P-value	.0001		.0001	
R-square	.18		.17	

## Conclusions

### Conclusions

The accurate assessment of sex offenders' risk of committing additional sex crime is important for public safety and to provide appropriate supervision and sanctions to sex offenders. The current study compared three subgroups of sex offenders based on their propensity to commit non-sexual violent crimes: non-violent, other violent, and domestic batterers. The research was guided by two main questions: Do the four standardized risk assessment scales had similar predictive accuracy for all three types of sex offenders? Do the subgroups have unique risk factors that may affect the predictive validity of the standardized scales because these scales assumed all risk factors applied and had similar weight for all subgroups of sex offenders?. Only the STATIC-2002 showed significant predictive validity above chance performance in predicting sexual recidivism during probation supervision for all three offender groups. For the non-violent sex offenders, all four risk assessment scales, the RRASOR, STATIC-99, STATIC-2002, and SACJ-Min had significant predictive validity in predicting sexual recidivism during and after release from probation. For the non-violent sex offender group, the STATIC-2002 compared to the other three scales had significantly higher predictive validity in predicting sexual recidivism during probation supervision. In predicting non-violent sex offenders' sexual recidivism after release from probation supervision, all four scales had significant and similar predictive validity, though they differed in their false positive and false negative rates. Only the STATIC-2002 was a significant predictor of domestic batterers' sexual recidivism while under probation supervision, and only the STATIC-99 and STATIC-2002 had significantly predicted their sexual recidivism after release from probation. For other violent sex offenders' sexual recidivism during probation supervision, the STATIC-2002 had significantly higher predictive validity than the RRASOR or STATIC-99, but had similar performance as the SACJ-min. None of the scales predicted other violent sex offenders' sexual recidivism after release from probation supervision.

Why did the predictive validity of the standardized scales vary across the types of offenders? The risk assessment scales had statistically significant predictive validity indices for the non-violent sex offender sample because the prior arrest measures and the offense characteristic measures were significant risk factors. Conversely, the logistic regression results indicate that the general criminality sub-scale of the Static-2002 was not a significant predictor of domestic batterer sex offenders' sexual recidivism after release from probation.

As other researchers have noted, the risk assessment field is moving toward incorporating risk factors that are meaningful to treatment and capture the triggers and motives of the sexual offending (Bonta & Wormith, 2007; Hanson & Morton-Bourgon, 2009). One risk factor that is meaningfully related to treatment and the motives of committing sex crime is the nature of any non-sexual violent crimes. After removing the effects of other risk factors including criminal history, sex offenders who also had committed violent non-sexual crimes had a higher rate of sexual recidivism after release from probation than did non-violent sex offenders. Sex offenders with violent non-sexual crimes compared to non-violent sex offenders also had more diverse and pervasive criminal histories, with a greater number of felony property crimes, non-felony property crimes, sex crimes, and drug offenses.

Although some researchers (Roberts et al., 2002) suggest that the sexual offending pathways of negative masculinity suggested by Knight (1999) and general criminality are similar, the difference between domestic batterer sex offenders and other violent sex offenders' risk factors provide indirect suggestive evidence that general criminality and negative masculinity are separate concepts that may provide unique information in predicting the risk of sexual recidivism. Committing the sex crime against an acquaintance or stranger did not predict other violent sex offenders' sexual recidivism, but did predict domestic batterers' sexual recidivism. However, both other violent sex offenders and domestic batterer sex offenders had diverse and long criminal histories. Further



research can determine the extent to which general criminality and domestic battering are related, and whether negative masculinity is a related, but separate risk factor. Future research should examine the risk factors associated with negative masculinity and domestic battering such as surveillance, economic control, isolation of intimate adult partners, and physical abuse of intimate adult partners, and assess the unique risk factors of the subgroup of sex offenders who are also domestic batterers. Specialized risk assessment scales for domestic violence may be a fruitful starting point for further research.

Given that possible unique risk factors exist for these subgroups, these findings suggest that future research may improve the predictive validity of future risk assessment scales by using statistical tools that allow unique risk factors for sub-groups of sex offenders. For example the risk assessment research on violent recidivism of non-sexual violent offenders has begun to use classification tree analysis to identify how best to combine significant risk factors (e.g., Stalans et al., 2004). Classification tree analysis is a non-linear cutting edge statistical tool that does not assume all risk factors apply to all sex offenders.

These findings should generalize to the population of sex offenders sentenced to probation supervision. The sample is large and selected from four different counties, and the findings did not change within counties. Moreover, the average rate of sexual recidivism in a review of previous studies for a five to six year follow-up period was 13.4% (Hanson & Morton-Bourgon, 2005). In comparison to the reported average, the domestic batterer sex offenders in this study had a higher rate of 19% for all new sex crimes and 15.2% for serious contact sex crimes. The other violent sex offenders had a rate of 11.2% for all new sex crimes. Given our findings, the sexual recidivism rates across studies may vary in part by what proportion of a sample has prior or current violent offending with lower rates expected as the proportion of non-violent sex offenders increases.

One issue in creating a classification scheme based on violent propensity is whether the classification of offenders based on the nature of their violence toward others overlaps substantially with classification schemes based on the age of the victim or relationship of the victim to the offender. The reported differences among non-violent, other violent, and domestic batterer sex offenders cannot be attributed to other differences in the three groups' index sex crimes that led to their probation sentence. The three groups of offenders did not differ in the type of sex crimes committed and the nature of these sex crimes. Moreover, this study's measures of the index crimes that placed the offenders on probation were more complete and accurate because information from the original indictment insured that plea bargaining did not distort our ability to code the actual nature of the sex crimes. Thus, plea bargaining affected the final charge for which offenders were convicted, but the actual nature of the sex crimes were coded from the indictments, police reports, and probation information.

Research has not sufficiently defined violent propensity as a risk factor. Our definition focused both on the nature of the violence and whether non-sexual violent crimes existed. The nature and extent of sex offenders' propensity to commit non-sexual violent crimes has been underestimated in prior research and in risk assessment scales which rely on prior convictions. Because victims of violent crimes, especially domestic violence, often do not participate in prosecution, many offenders who commit and are arrested for violence are not convicted of a violent crime (Stalans et al., 2004). Sex offenders were classified as domestic batterers if they had any arrest for a statutorily defined domestic violence crime that was not part of the index crime, whereas sex offenders were classified as other violent if they had any arrest for all other violent crimes and were not arrested for a domestic violence crime. Typically, police officers reserve domestic battery arrests for intimate adult partners and place charges of child endangerment and abuse for excessive physical violence against children. We do not believe that our classification of domestic batterers contains individuals that were not violent against intimate partners; however, some of the other violent offenders could be domestic batterers who received non-specific violent crime charges before changes in statutes in 1986 created specific crimes for domestic violence. Despite

the potential underreporting of violent and sexual crimes committed against intimate partners, sex offenders who were domestic batterers had higher rates of sexual recidivism and had more diverse and pervasive criminal histories. The underreporting of domestic violence, however, suggests that professionals should consider any domestic battery arrest as an indication of a tendency to commit physical violence against family members. The findings also suggest that probation and parole interviews, which incorporate questions about physical violence toward intimate partners and hostility toward women and female teenagers, may be useful for assessing risk. The current study highlights the practical and theoretical importance of classifying sex offenders based on their propensity for non-sexual violence and the nature of that violence.

Future development of risk assessment scales for predicting sexual recidivism should further examine whether predictive accuracy is increased by creating specialized instruments for subgroups of sex offenders based on their violent propensity or creating an instrument that allows unique risk factors for domestic batterer sex offenders. This study calls the field attention to this understudied, but tenacious group of sex offenders, and suggests additional bridging of the risk assessment studies on violent recidivism with the risk assessment studies on sexual recidivism. If domestic violence offenses are a risk factor for further sexual recidivism, judges and other criminal justice professional may tailor their sanctions and management of this subgroup of sex offenders. This study did not provide information about the extent to which these three subgroups of sex offenders have different treatment profiles and pathways to sexual offending; future research should explore this topic. This study suggests that further research is warranted to explore the whether non-violent sex offenders, other violent sex offenders, and sex offenders who are also domestic batterers have different mental health, substance abuse, treatment responses, and differential responses to supervision strategies.

## References

- Abracen, J., Looman, J., Di Fazio, R., Kelly, T., & Stirpe, T. (2006). Patterns of attachment and alcohol abuse in sexual and violent non-sexual offenders. *Journal of Sexual Aggression, 12*(1), 19-30.
- Barbaree, H. E., Seto, M. C., Langton, C. M., & Peacock, E. J. (2001). Evaluating the predictive accuracy of six risk assessment instruments for adult sex offenders. *Criminal Justice and Behavior, 28*(4), 490-521.
- Beccaria, C. [1764] (1963). *On Crimes and Punishments, trans.* Henry Paolucci. Indianapolis, IN: Bobbs-Merrill.
- Beech, A. R., Fisher, D. D., & Thornton, D. (2003). Risk assessment of sex offenders. *Professional Psychological Research, 34*(4), 339-352.
- Berliner, L., Schram, D., Miller, L. L., & Milloy, C. D. (1995). A sentencing alternative for sex offenders: A study of decisionmaking and recidivism. *Journal of Interpersonal Violence, 10*(4), 487-502.
- Craig, L. A., Beech, A., & Browne, K. D. (2006). Cross-validation of the risk matrix 2000 sexual and violent scales. *Journal of Interpersonal Violence, 21*, 612-633.
- Craig, L. A., Browne, K. D., Stringer, I. & Beech, A. (2005). Sexual recidivism: A review of static, dynamic, and actuarial predictors. *Journal of Sexual Aggression, 11*(1), 65-84.
- Danni, K. A., & Hampe, G. D. (2000). An analysis of predictors of child sex offender types using presentence investigation reports. *International Journal of Offender Therapy and Comparative Criminology, 44*(4), 490-504.

Dempster, R. J., & Hart, S. D. (2002). The relative utility of fixed and variable risk factors in discriminating sexual recidivists and nonrecidivists. *Sexual Abuse: A Journal of Research and Treatment*, 14(2), 121-138/.

Doren, D. M., (2004). Toward a multidimensional model for sexual recidivism risk. *Journal of Interpersonal Violence*, 19(8), 835-856.

Doren, D. M. (2004). Stability of the interpretative risk percentages for the RRASOR and static-99. *Sexual Abuse: A Journal of Research and Treatment*, 16(1), 25-35.

Efron, N., & Tibshirani, R.J. (1993). *An introduction to the bootstrap*. Chapman & Hall, London.

English, K., Pullen, S., Jones, L., & Krauth, M. (1996). A model process: A containment Approach. In English, K., Pullen, S., & Jones, L. (Eds). *Managing Adult Sex Offenders: A Containment Approach*. (pp. 2-1 to 2-45) Lexington, KY: American Probation and Parole Association.

Firestone, P., Bradford, J. M., McCoy, M., Greenberg, D. M., Larose, M. R., & Curry, S. (1999). Prediction of recidivism in incest offenders. *Journal of Interpersonal Violence*, 14(5), 511-531.

Firestone, P., Bradford, J. M., McCoy, M., Greenberg, D. M., Curry, S., & Larose, M. R. (2000). Prediction of recidivism in Extrafamilial child molesters based on court-related assessments. *Sexual Abuse: A Journal of Research and Treatment*, 12(3), 203-221.

Gentry, A. L., Dulmus, C. N., Theriot, M. T. (2005). Comparing sex offender risk classification using the Static-99 and LSI-R Assessment Instruments. *Research on Social Work Practice*, 15(6), 557-563.

Greenfeld, L. A. (1997). *Sex Offenses and Offenders*. Washington, D.C.: U.S. Department of Justice (NCJ-163392), Bureau of Justice Statistics.

- Gudjonsson, G. H., & Sigurdsson, J. F. (2000). Differences and similarities between violent offenders and sex offenders. *Child Abuse & Neglect*, 24(3), 363-372.
- Hale, R. (1997). Motives of reward among men who rape. *American Journal of Criminal Justice*, 22(1), 101-119.
- Hansen, R. K., Gizzarelli, R., & Scott, H. (1994). Attitudes of incest offenders: Sexual entitlement and acceptance of sex with children. *Criminal Justice and Behavior*, 21, 187-202.
- Hanson, R. K., Steffy, R. A., & Gauthier, R. (1993). Long-term recidivism of child molesters. *Journal of Consulting and Clinical Psychology*, 61(4), 646-652.
- Hanson, R. K., Scott, H., & Steffy, R. A. (1995). A comparison of child molesters and nonsexual criminals: risk predictors and long-term recidivism. *Journal of Research in Crime and Delinquency*, 32(3), 325-337.
- Hanson, R. K., & Bussiere, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, 66(2), 348-362.
- Hanson, K. R., & Harris, A. J. R., (2000). Where should we intervene? Dynamic predictors of sexual offense recidivism. *Criminal Justice and Behavior*, 27(1), 6-35.
- Hanson, R. K., & Thornton, D., (2000). Improving Risk Assessment for Sex Offenders: A comparison of three actuarial scales. *Law & Human Behavior*, 24(1), 119-136.
- Hanson, R. K. (2005). Twenty years of progress in violence risk assessment. *Journal of Interpersonal Violence*, 20, 212-217.
- Hanson, R. K., & Morton-Bourgon, K. E. (2005). The characteristics of persistent sexual offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical Psychology*, 73(6), 1154-1163.

Harris, G. T., Rice, M. E., Quinsey, V. L., Lalumiere, M. L., Boer, D. & Lang, C. (2003). A multisite comparison of actuarial risk instruments for sex offenders. *Psychological Assessment*, 15(3), 413-425.

Hartley, C. (2001). Incest offenders' perceptions of their motives to sexually offend within their past and current life context. *Journal of Interpersonal Violence*, 16(5), 459-475.

La Fond, J. Q. (1998). The costs of enacting a sexual predator law. *Psychology, Public Policy, and Law*, 4(1/2), 468-504.

Langstrom, N. (2004). Accuracy of actuarial procedures for assessment of sexual offender recidivism risk may vary across ethnicity. *Sexual Abuse: A Journal of Research and Treatment*, 16(2), 107-120.

Langton, C. M., Barbaree, H. E., Seto, M. C., Peacock, E. J., Harkins, L., & Hansen, K. T. (2007). Actuarial assessment of risk for reoffense among adult sex offenders: Evaluating the predictive accuracy of the Static-2002 and five other instruments. *Criminal Justice and Behavior*, 34, 37-58.

Lurigio, A. J., Jones, M. & Smith, B. E. (1995). Up to speed --- child sexual abuse: Its Causes, Consequences, and Implications for Probation Practice. *Federal Probation*, 59, 69-76.

Marques, J. K. (1999). How to answer the question: Does sex offender treatment work? *Journal of Interpersonal Violence*, 14(4), 437-451.

Marshall, W. L., Payne, K., Barbaree, H. E., & Eccles, A. (1991). Exhibitionists: Sexual preferences for exposing. *Behavioral Research & Therapy*, 29, 340-367.

McGrath, R. J., Hoke, S. E., & Vojtisek, J. E. (1998). Cognitive-behavioral treatment of sex offenders: A treatment comparison and long-term follow-up study. *Criminal Justice and Behavior*, 25(2), 203-225.

- Meyer, S. L. (2000). Prevalence and characteristics of sexual aggression in court-mandated batterers. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, Vol 60(7-B), Jan 2000, pp. 3573.
- Monahan, J., & Steadman, H. J. (1994). Violence and Mental Disorders: Developments in Risk Assessment. Chicago: University of Chicago Press.
- Nunes, K. L., Firestone, P., Wexler, A. F., Jensen, T. L., & Bradford, J. M. (2007). Incarceration and recidivism among sexual offenders. *Law and Human Behavior*, 31, 305-318.
- Olver, M. E., Wong, S. C. P., Nicholaichuk, T., & Gordon, A. (2007). The validity and reliability of the violence risk scale – sexual offender version: Assessing Sex offender risk and evaluating therapeutic change. *Psychological Assessment*, 19(3), 318-329.
- Paternoster, R. (1987): The deterrent effect of the perceived certainty and severity of punishment: A review of the evidence and issues. *Justice Quarterly*, 4(2), 173-217.
- Paternoster, R., Saltzman, L. E., Waldo, G. P., & Chiricos, T. (1983). Perceived risk and social control: Do sanctions really deter? *Law & Society Review*, 17, 457-479.
- Prentky, R. A., Knight, R. A., & Lee, A. F. S. (1997). Risk factors associated with recidivism among extra familial child molesters. *Journal of Consulting and Clinical Psychology*, 65(1), 141-149.
- Prentky, R. A., Lee, A. F. S., Knight, R. A., & Cerce, D. (1997). Recidivism rates among child molesters and rapists: A methodological analysis. *Law and Human Behavior*, 21(6), 635-659.
- Proulx, J., Pellerin, B., Paradis, Y., McKibben, A., Aubut, J., & Ouimet, M. (1997). Static and dynamic predictors of recidivism in sexual aggressors. *Sexual abuse: A journal of research and treatment*, 9(1), 7-27.



Rice, M. E., & Harris, G. T. (1995). Violent recidivism: Assessing predictive validity. *Journal of Consulting and Clinical Psychology*, 63, 737-748.

Rice, M. E., Harris, G. T., Lang, C., & Cormier, C. (2006). Violent sex offenses: How are they best measured from official records? *Law and Human Behavior*, 30(4), 525-541.

Romero, J. J., & Williams, L. M. (1983). Group psychotherapy and intensive probation supervision with sex offenders: A comparative study. *Federal Probation*, 47, 36-42.

Rosenberg, A. D., Abell, S. C., & Mackie, J. K. (2005). An examination of the relationship between child sexual offending and psychopathy. *Journal of Child Sexual Abuse*, 14(3), 49-66.

Seidman, B. T., Marshall, W. L., Hudson, S. M., & Robertson, P. J. (1994). An examination of intimacy and loneliness in sex offenders. *Journal of Interpersonal Violence*, 9(4), 518-534.

Silver, E. & Chow-Martin, L. (2002). A multiple models approach to assessing recidivism risk: implications for judicial decisionmaking. *Criminal Justice and Behavior*, 29(5), 538-568.

Stadtland, C., Hollweg, M., Kleindienst, N., Dietl, J., Reich, U., & Nedopil, N. (2005). Risk assessment and prediction of violent and sexual recidivism in sex offenders: Long-term predictive validity of four risk assessment instruments. *The Journal of Forensic Psychiatry & Psychology*, 16(1), 92-108.

Stalans, L. J. (2004). Risk and treatment assessment of adult sex offenders: A review of recent developments and effectiveness of interventions. *Criminal Justice and Behavior*, 31(5), 564-608.

Stalans, L. J., & Seng, M. (in press). Identifying Subgroups at high risk of dropping out of domestic batterer treatment: The buffering effects of a high school education. *International Journal of Offender Therapy and Comparative Criminology*

Stalans, L. J., Seng, M., & Yarnold, P. R. (2002). Long-term impact evaluation of specialized sex offender probation programs in Lake, DuPage, and Winnebago Counties. Chicago, IL: Illinois Criminal Justice Information Authority.

Stalans, L. J., Seng, M., Yarnold, P. R., Lavery, T., & Swartz, J. (2001). An implementation and initial impact evaluation of the Adult Sex Offender Probation Project in Cook County. Chicago, IL: Illinois Criminal Justice Information Authority.

Steadman, H.J., Silver, E., Monahan, J., Appelbaum, P.S., Robbins, P. C., Mulvey, E. P., Grisso, R., Roth, L. H., & Banks, S. (2000). A classification tree approach to the Development of Actuarial Violence Risk Assessment Tools. *Law & Human Behavior*, 24(1), 83-100.

Stermac, L., Hall, K. & Henskens, M. (1989). Violence among child molesters. *The Journal of Sex Research*, 26(4), 450-459.

Studer, L. H., & Reddon, J. R. (1998). Treatment may change risk prediction for sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, 10(3), 175-181.

Studer, L. H., Clelland, S. R., Aylwin, A. S., Reddon, J. R., & Monro, A. (2000). Rethinking risk assessment for incest offenders. *International Journal of Law and Psychiatry*, 23(1), 15-22.

Vrieze, S. I., & Grove, W. M. (2008). Predicting sex offender recidivism. I. Correcting for item overselection and accuracy overestimation in scale development. II. Sampling Error-induced attenuation of predictive validity over base rate information. *Law and Human Behavior*, 32, 266-278.

Wilson, R. J., Stewart, L., Stirpe, T., Barrett, M., & Cripps, J. E. (2000). Community-based sex offender management: Combining parole supervision and treatment to reduce recidivism. *Canadian Journal of Criminology*, 42(2), 177-188.

Yarnold, P. R. (1996). Discriminating geriatric and non-geriatric patients using functional status information: An example of classification tree analysis via UniODA. *Educational and Psychological Measurement, 56*, 656-667.

Yarnold P.R., Soltysik R.C., & Bennett C.L. (1997). Predicting in-hospital mortality of patients with AIDS-related Pneumocystis carinii pneumonia: An example of hierarchically optimal classification tree analysis. *Statistics in Medicine, 16* 1451-1463.

Yarnold, P. R., & Soltysik, R. C. (1991). Theoretical distribution of optimal for univariate discrimination of random data. *Decision Sciences, 22*, 739-752.

Yarnold, P. R., & Soltysik, R. C. (2005). *Optimal Data Analysis*. Washington, D.C.: American Psychological Association Press.