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Final Report on Sex Offenders: Recidivism and Collateral Consequences

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ABSTRACT

This report examines the efficacy of sex offender registration and notification (SORN) through its influence on sex offender recidivism and collateral consequences. The first study examines the recidivism rates of two samples of sex offenders, those released prior to SORN and a sample released under SORN in New Jersey. It asks whether or not there are distinct risk profiles among sex offenders with regard to their recidivism trajectories, and if these profiles are similar or different for sex offenders pre- and post- SORN. Additional analyses also include an examination of the influence of demographics, substance abuse, mental health issues, treatment history, sex offense incident characteristics, and criminal history on recidivism trajectories. The second study looks at whether the recidivism trajectories post-prison release for post-SORN sex offenders are similar to or different from the recidivism trajectories post-prison release for post-SORN non-sex offenders who are released from prison via parole. It also specifically focuses on whether or not a series of collateral consequences are experienced similarly or differently among these post-SORN sex and post-SORN non-sex offender parolees.

Recidivism data for both studies in this report were obtained through the New Jersey State Police Computerized Criminal History System and the National Crime Information Center's Interstate Identification Unit. The first study utilizes two samples of sex offenders, and each was provided by the New Jersey Department of Corrections (NJDOC). The pre-SORN group included a random sample of 250 male sex offenders released from prison by the NJDOC during the years 1990-1994, while the post-implementation group utilized the same sampling procedure and size and matched according to relevant demographics (age, race, and criminal history), with the exception that they were released during the years 1995-1999. For the second study, random samples of 247 post-SORN sex offenders and 250 post-SORN non-sex offenders released from

prison in New Jersey via parole during 1995-1999 were drawn from the New Jersey Department of Corrections' databases. The samples in both studies were followed for approximately eight years post-release for assessing recidivism. For both studies, official records of re-arrest for new offenses were employed as the measure of recidivism. Semi-parametric trajectory modeling was also used in both studies to estimate the recidivism trajectories of the pre- and post-SORN releasees, and the recidivism trajectories of the post-SORN sex offender and the non-sex offender releasees.

The first study finds that there are limited observable benefits of SORN regarding sex offender recidivism and general recidivism. With an overall low rate of sex offense recidivism, SORN status (e.g. whether an offender is or is not subject to SORN) failed to predict whether sex offenders would reoffend sexually. The results are consistent with previous research which has argued that sex offenders have relatively low rates of recidivism, typically significantly lower than non-sex offenders. SORN status was also not a significant predictor of which sex offenders would reoffend in general, including non-sexual recidivism. Although sex offenders and non-sex offenders share the experience of collateral consequences, results from the second study reveal that several collateral consequences including not living with friends, living in group facilities, and residential relocation appear to differentially impact sex offenders.

Policy makers and treatment providers should focus their efforts on those sex offenders identified as belonging to the high-risk trajectory with a particular interest in targeting the risk factors related to a high-risk trajectory. A targeted rather than universal application of SORN seems a viable alternative. Ultimately, the two studies in this report suggest that SORN is not likely to be an effective deterrent for sex offender recidivism and may produce an environment

with specific collateral consequences that inhibit reintegration efforts post-prison release for sex
offenders.

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EXECUTIVE SUMMARY

Synopsis of the Problem

Sex offenders, the seemingly worst of the worst among criminal offenders today, are commonly, albeit incorrectly, assumed to be highly recidivistic, as well as specialists, engaged in sex offending only. Despite the fact that our legal responses to sex offenders, primarily sex offender registration and notification (SORN), are based on assumptions that those who commit sex crimes have no control over their sexual impulses and will repeat their crimes again, relatively little research has found support for such beliefs.

At the center of the arguments in support of the growing breadth and depth of legal responses to sex offenders is the belief that there is a high rate of recidivism among sex offenders. As a foundation for SORN is the belief and pursuit of deterrence. SORN is premised on the idea that by making information public about identities, and residential locations, of known sex offenders, the public will be better equipped to avoid situations in which these offenders have possibilities to reoffend. The research evidence, though, does not support this belief. However, any review of reported rates of sex offender recidivism should be viewed with consideration of the inherent similarities and differences in methodologies across studies. Further, it is important to recognize that not all sex offenders are alike in regards to their offenses. There is great diversity among sex offenders and corresponding recidivism rates when looking at their preferences for victims.

The evidence arising from prior SORN evaluations has generally shown that such policies are limited in their effect on sex offender recidivism (Sample & Kadleck, 2008; Sandler, Freeman, & Socia, 2008; Schram & Milloy, 1995; Tewksbury & Jennings, 2010; Vasquez, Maddan, & Walker, 2008; Zgoba, Witt, Veysey, & Dalessandro, 2008). In contrast, a number of studies

have shown a (legislatively intended) relationship between SORN and sex offender recidivism (Barnoski, 2005; Duwe & Donnay, 2008; Freeman, 2009). There are also significant economic costs associated with sex offender registration and notification, which produce little or no increase in public safety. Further, there is a well-developed body of literature suggesting that sex offender registration and community notification has numerous costs in the form of collateral consequences for both sex offenders and their families (Grubesic, Mack, & Murray, 2007; Hughes & Burchfield, 2008; Hughes & Kadleck, 2008; Levenson, 2011; Levenson & Cotter, 2005; Levenson, D'Amora, & Hern, 2007; Levenson & Hern, 2007; Mercado, Alvarez, & Levenson, 2008; Mustaine, Tewksbury, & Stengel, 2006; Socia, 2011; Tewksbury, 2004, 2005; Tewksbury & Lees, 2006, 2007; Tewksbury & Zgoba, 2010; Zandbergen & Hart, 2006, 2009; Zgoba, Levenson, & McKee, 2009). The importance of recognizing such collateral consequences is centered on the belief that such potentially deleterious effects on offenders may in fact contribute to sex offenders failing to register and to the related potential for recidivism (Levenson, Letourneau, Armstrong, & Zgoba, 2010), rather than facilitating community safety (the expressed purpose of SORN in the first place).

These collateral consequences include difficulties in maintaining employment, relationship difficulties, public recognition and harassment/attack, and difficulties finding and maintaining suitable housing. Furthermore, prior research has demonstrated that registered sex offenders tend to disproportionately reside in the most socially undesirable neighborhoods, and in some situations are banned from certain jurisdictions altogether due to the residency restrictions imposed (Grubesic, Mack, & Murray, 2007). In addition, there has also been research suggesting that housing difficulties are more salient for sex offenders compared with non-sex offenders residing in the community (Hughes & Burchfield, 2008).

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Ultimately, while it is clear that the collateral consequences reviewed above are likely to apply to

all felons in general (Tewksbury & Lees, 2006), there is reason to believe that these adverse

outcomes may have a greater impact on sex offenders, yet research has largely ignored this latter

empirical question. In addition, there is even less research that has directly compared registered

sex offenders with non-sex offenders who reside in the community.

Study 1

Purpose

Study # 1 examines the recidivism rates of two samples of sex offenders, those released prior to

SORN and a sample released under SORN in New Jersey. The first study asks whether or not

there are distinct risk profiles among sex offenders with regard to their recidivism trajectories,

and if these profiles are similar or different for sex offenders pre- and post- SORN. Additional

analyses also include an examination of the influence of demographics, substance abuse, mental

health issues, treatment history, sex offense incident characteristics, and criminal history on

recidivism trajectories.

Methods

Data and Sample

Data for arrest records were obtained through the New Jersey State Police Computerized

Criminal History System and the National Crime Information Center's Interstate Identification

Unit. This study used two samples of sex offenders, and each was provided by the New Jersey

Department of Corrections (NJDOC). The first sample included offenders released prior to the

implementation of SORN, and the second sample included sex offenders released after the

inception of SORN in New Jersey. The pre-SORN group included a random sample of 250 male sex offenders released from prison by the NJDOC during the years 1990-1994, while the post-implementation group utilized the same sampling procedure and size and matched according to relevant demographics (age, race, and criminal history), with the exception that they were released during the years 1995-1999. Both samples were followed for approximately eight years post-release for assessing recidivism.

Dependent Variable

Official records of re-arrest were employed as the measure of recidivism in the eight years following each sex offender's release. Arrest was utilized as the manner by which recidivism was operationalized because sexual offending is a low base rate crime. Parole violations and technical violations were excluded from the current study's measure of re-arrest. As such, offenses that were counted as new offenses represented new criminal charges. The measure of recidivism that is used to estimate recidivism trajectories that follow is the frequency of general recidivism in the eight years post-release from prison. Sex offense recidivism is also included as a dependent variable in the final stage of the analysis.

Independent Variable

Data on a number of additional variables were also collected to determine their effect on recidivism. Included among the independent variables are measures of offender demographics (age, race, education level, marital status, employment, and whether the offender was raised in a two-parent household), substance abuse (alcohol and/or drug problems), mental health issues (diagnosed mental health problems in childhood), receipt of treatment while incarcerated, sex offense incident characteristics (whether a child molester or rapist, victim sex, relationship to

victim, whether a weapon was used in sex offense), and criminal history (whether offender had a prior sexual offense arrest, prior non-sex offense arrest, sentence length in months, and total months served).

Statistical Procedure

Semi-parametric trajectory modeling was the particular method used in this study to estimate the recidivism trajectories of the pre- and post-SORN releasees (Nagin, 2005; Nagin & Land, 1993). Distinct from traditional time series analysis, this method permits the possibility of detecting distinct sub-groups of sex offenders that reveal different patterns of recidivism in the eight years following their release from prison.

Stages of Analysis

First, the analysis includes a presentation of bivariate and descriptive statistics comparing the pre- and post- SORN releasees. This is followed by an estimation of the semi-parametric group models in order to identify which recidivism trajectories provide the best model fit for the patterns of sex offenders' reoffending in the eight years following their prison release. Once the recidivism trajectories are determined, a chi-square test is performed to assess whether the prevalence of sex offenses classified in a particular recidivism trajectory is statistically different when comparing the pre-SORN releasees' trajectories with the post-SORN releasees' trajectories. Next, a series of chi-square tests and t-tests are estimated to evaluate whether demographics significantly discriminate the trajectories of recidivism. This is followed by an investigation into the factors that are significant for distinguishing trajectory group membership in a multivariate context using logistic regression model. The final stage of the analysis presents two logic regression models evaluating the ability of SORN cohort status (post-SORN rather

than pre-SORN) to predict sex and/or general recidivism in the eight years post prison release for relevant covariates.

Key Findings

- •Overall, sex offenders were white, employed prior to offense, from two-parent households, limited education, and were not married. Sex offenders, on average, were in their late 30s. Roughly one in every four sex offenders had mental health problems, and alcohol and drug issues were prevalent in about half of the sex offenders. Nearly all of the sex offenders received treatment while they were incarcerated for their current sex offense. Most sex offenders were child molesters and preferred female victims and family member victims. About one quarter of sex offenders had a prior sex offense arrest, and two-thirds had been arrested before for any type of offense. On average, sex offenders were sentenced to approximately nine years, and they had served a little more than half of their sentence.
- The prevalence of recidivating for another sex offense was low (13% or less) while nearly half of sex offenders did recidivate with some type of offense.
- There were a significantly greater proportion of child molesters among the post-SORN releasees, and a significantly greater proportion of rapists among the pre-SORN releasees.
- There were two distinct general recidivism trajectories for both the pre- and post-SORN releasees based on their frequency of re-arrest in the eight years following their release from prison (a low-risk trajectory group and a high-risk trajectory group).
- For both the pre- and post-SORN releasees, the most prevalent trajectory is the low-risk trajectory. This includes non-recidivists as well as those identified to be low-risk who perhaps accumulated one minor arrest in one of the eight years post-prison release, but did not demonstrate a trajectory of recidivism that was statistically determined to be high-risk.
- The sex offenders in the low-risk trajectories, on average, did not accumulate greater than approximately one-tenth of an arrest in any of the eight years following their release from prison for a sex offense.
- The pre- and post-SORN high-risk trajectories indicate that among those sex offenders who demonstrate high-risk of recidivism post-prison release that the majority of these sex offenders recidivate early on and there is a noticeable increase in their frequency of recidivism from year 1 to year 2 post-release. In the remaining years, these sex offenders demonstrate a relatively stable high-risk for recidivating with the exception being an additional peak in year 7 for the pre-SORN releasees and in year 6 for the post-SORN releasees.
- •High-risk sex offenders that are considered pre-SORN accumulated between 11 and 36 arrests, whereas high-risk sex offenders considered post-SORN accumulated between 21 and 40 as a group in each of the eight years following their release from prison.
- •There were a significantly greater proportion of non-whites and non-married sex offenders in the high-risk trajectories.

- •There were a significantly greater proportion of sex offenders that were reared in twoparent households and employed prior to being incarcerated in the low-risk trajectory.
- •There were a significantly greater proportion of sex offenders with drug problems in the high risk trajectory.
- •There were a significantly greater proportion of rapists in the high-risk trajectory, whereas there were a significantly greater proportion of child molesters in the low-risk category.
- Female victims and stranger victims were the more frequent victims for the sex offenders in the high-risk trajectory.
- •A greater proportion of sex offenders in the high-risk trajectory had used a weapon when committing the sex offense for which they were released from prison, and a substantially greater proportion of sex offenders who had a prior non-sex offense criminal history were in the high-risk trajectory.
- A significantly greater proportion of sex offenders in the high-risk trajectory recidivated for a sex offense post-prison release, and the mean frequency of re-arrests were significantly greater for the sex offenders in the high-risk trajectory.
- Younger sex offenders were more likely to be in the high-risk trajectory.
- Having a prior non-sex offense arrest significantly increased the likelihood of a sex offender being classified in a high-risk trajectory for pre- and post-SORN releasees.
- Having a female victim significantly increased the likelihood of being in the high-risk trajectory for the pre-SORN releasees, and being married significantly decreased the likelihood of a sex offender being classified to the high-risk trajectory for the post-SORN releasees.
- •SORN cohort status did not significantly predict whether or not a sex offender recidivated for either a sex offense or any offense in the eight years post release from prison.
- Age and prior criminal history were the only covariates that were significant for predicting sex offense recidivism.
- •Age, employment prior to offense, having drug problems, and prior criminal history for a non-sex offense significantly predicted general recidivism.

Study 2

Purpose

Study # 2 examines whether the recidivism trajectories post-prison release for post-SORN sex offenders are similar to or different from the recidivism trajectories post-prison release for post-SORN non-sex offenders who are released from prison via parole. The study also specifically

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focuses on whether or not a series of collateral consequences are experienced similarly or

differently among these post-SORN sex and post-SORN non-sex offender parolees.

Methods

Data and Sample

Recidivism data were obtained through the New Jersey State Police Computerized Criminal

History System and the National Crime Information Center's Interstate Identification Unit.

Random samples of 247 post-SORN sex offenders and 250 post-SORN non-sex offenders

released from prison in New Jersey via parole during 1995-1999 were drawn from the New

Jersey Department of Corrections' computerized systems.

Dependent Variable

Consistent with Study #1, re-arrests are utilized as the outcome measure of recidivism in the

eight years following each sex and non-sex offender's release from the New Jersey Department

of Corrections.

Independent Variable

Data on a number of collateral consequences were collected for the random sample of post-

SORN sex offender releasees and the random sample of post-SORN non-sex offenders released

via parole in order to determine their effect on recidivism along with other recidivism related

information when applicable. These variable include post-release employment, post-release

homelessness, post-release housing (owner-occupied, renter-occupied), living arrangements

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(lives alone, lives with family, lives with friends, lives in group facility), and residential relocations. In addition, demographic information (race and age) is also included.

Statistical Procedure

Semi-parametric modeling was used to estimate the recidivism trajectories of the post-SORN sex offender and the non-sex offender releasee (Nagin, 2005; Nagin & Land, 1993). Semi-parametric modeling involves an iterative process whereby models are estimated with varying number of groups (k+1) and varying functional (censored normal, zero-inflated Poisson distribution) and parametric forms (constant, linear, quadratic, cubic) until the Bayesian Information Criteria (BIC) is maximized and the trajectory solution provides the best fit for the data. Posterior probabilities of group assignment are also examined to determine the precision of the trajectory solution in assigning individuals to the particularly group-based trajectory that they have the highest likelihood of belonging to based on their individual trajectory.

Stages of Analysis

The first stage of analysis will resemble that of Study # 1, such that it includes a presentation of summary statistics for the two samples such as race, age, and the frequency of recidivism.

Similarly, the second stage of analysis explores the group-based trajectories of recidivism in the eight years following the post-SORN sex and non-sex offenders' release from the New Jersey Department of Corrections. The final stage of the analysis provides an investigation into the collateral consequences that sex offenders and non-sex offenders experience.

Key Findings

• Nearly half of the non-sex offenders were non-white compared to one-third of the sex offenders who were classified as non-white.

- Sex offenders, on average, were approximately two and one-half years older than the non-sex offenders.
- The non-sex offenders, on average, were re-arrested significantly more frequently post-release compared to the sex offenders.
- For both the post-SORN sex offender and non-sex offender releasees, the most prevalent trajectory is the low-risk trajectory.
- Sex and non-sex offenders in the high-risk trajectories tend to offend early upon release, increase their frequency of recidivism over time, and peak in year 7 post-release for the sex offenders and peak in year 4 for the non-sex offenders.
- 94.7% of the sex offenders are identified as low-risk compared to less than 75% of the non-sex offenders.
- There are roughly five times as many non-sex offenders in the high-risk trajectory compared to the number of sex offenders in the high-risk trajectory.
- A smaller percentage of post-SORN sex offenders were employed, lived in renteroccupied housing, and lived with friends post-release compared to post-SORN non-sex offenders.
- A larger percentage of post-SORN sex offenders lived in owner-occupied housing, were homeless/transient, lived alone, lived in "other" types of housing situations, and had moved post-release compared to post-SORN non-sex offenders.
- The percentage of post-SORN sex offenders living with friends post-release was significantly less than the percentage of post-SORN non-sex offenders living with friends post-release.
- The percentages of post-SORN sex offenders living in a group facility post-release and having moved post-release were significantly greater than the percentages of post-SORN non-sex offenders who were living in a group facility or had moved post-release.

Conclusion

The findings from these two studies provide results that are informative for public policy regarding the use and expected benefits of sex offender registration and notification. From Study # 1, it is clear that there are limited observable benefits of SORN regarding sex offender recidivism and general recidivism. With an overall low rate of sex offense recidivism, SORN status failed to predict whether sex offenders would reoffend sexually. The results are consistent with previous research which has argued that sex offenders have relatively low rates of recidivism, typically significantly lower than non-sex offenders (Furby, et al, 1989; Hanson & Morton-Bourgon, 2005; Langevin, et al, 2004; Sample & Bray, 2003, 2006). Furthermore,

SORN status (e.g. whether an offender was or was not subject to SORN) was not a significant predictor of which sex offenders would reoffend in general, including non-sexual recidivism.

There are clearly two distinguishable groups of sex offenders in regards to patterns of general recidivism. For both samples in Study # 1, more than three-quarters of sex offenders are identified as low-risk of general recidivism, with low rates or repeat criminal offenses. The results of this first study suggest that not only is sex recidivism low among sex offenders regardless of SORN status, general recidivism trends are largely unaffected by SORN as well. Therefore, Study # 1 was the first of its kind to demonstrate that SORN as a policy has little effect on two related and socially important recidivism outcomes using the trajectory methodology: 1) reducing/deterring sexual recidivism and 2) reducing/deterring recidivism in general. Results from Study # 2 indicated that while sex offenders and non-sex offenders share the experience of collateral consequences and enhanced community supervision post-prison release, several collateral consequences including not living with friends, living in group facilities, and residential relocation appear to differentially impact sex offenders.

Policy makers and treatment providers should focus their efforts on those sex offenders identified as belonging to the high-risk trajectory with a particular interest in targeting the risk factors related to a high-risk trajectory. A targeted rather than universal application of SORN seems a viable alternative. Under the current SORN policies, being married and having an inplace support system may alleviate some of the psychological and social collateral consequences. Finally, and highly relevant for policy, SORN cohort status did not significantly predict sex or general recidivism.

Future research is encouraged to examine whether the results from this study can be replicated using self-report data and other official measures. Potential limitations of the two studies are that the data are from only one state, and there is variation across states in how SORN is applied. Also, the extent to which these results would generalize to other types of sex offenders such as exhibitionists, voyeurs, and child pornographers has yet to be addressed. Although the first study incorporated a wide range of variables from a number of risk-related domains, there is certainly the possibility that additional recidivism-relevant variables that were not available for use in this study may be an important addition to research in the future on sex offender recidivism. Future studies should also make an effort to account for "lock-up" time or "street time" when examining sex offender recidivism over time. Future studies should also examine other collateral consequences, such as physical assault, loss of social relationships, and harassment, which may or may not be differentially experienced by sex offenders and non-sex offender parolees. Ultimately, these findings suggest that SORN is not likely an effective deterrent for sex offender recidivism (which by itself is not a highly likely occurrence) and may produce an environment with specific collateral consequences that inhibit reintegration efforts post-prison release for sex offenders.

INTRODUCTION

Sex offenders, the seemingly worst of the worst among criminal offenders today, are commonly, albeit incorrectly, assumed to be highly recidivistic (Zimring, Piquero, & Jennings, 2007). Not only are sex offenders believed to be persistent offenders, but so too are they often considered to be specialists, engaging in sex offending only. Recent years have seen a growing body of literature investigating the hypothesized specialization among sex offenders, with results suggesting some evidence of specialization, although not as high a degree of specialization as commonly assumed (Magers, Jennings, Tewksbury, & Miller, 2009; Miethe, Olson, & Mitchell, 2006; Sample & Bray, 2003; 2006; Zgoba, 2004; Zimring, Piquero, & Jennings, 2007, Zimring, Jennings, Piquero, & Hays, 2009).

Public and policy maker concerns about sex offenders have led to an ever-expanding legal response to sex offenders and offenses. Most prominent among these developing responses are sex offender registration and community notification laws. At their foundation such laws are predicated upon the assumption that individuals who commit sex crimes "have no control over their sexual impulses and will repeat their crimes again and again regardless of punishment or other experiences" (Sutherland, 1950, p. 547). Despite the fact that our legal responses to sex offenders are based on such assumptions (Sample & Kadleck, 2008), relatively little research has found support for such beliefs.

Sex Offender Recidivism and Risk Factors

At the center of the arguments in support of the growing breadth and depth of legal responses to sex offenders is the belief that there is a high rate of recidivism among sex

offenders. The research evidence, however, does not support this belief.¹ An early review of 42 studies measuring sex offender recidivism concluded that sex offenders have a relatively low rate of recidivism, less than 12% (Furby, Weinrott, & Blackshaw, 1989). This claim is not without dispute, however. Langevin et al. (2004) argue that there is variability in sex offender recidivism, and that it can be explained as the result of measurement differences, varying follow-up times, and the underreporting of sex offenses. For example, recent estimates suggest that rapes and sexual assaults are one of the most underreported types of crimes with less than 39 percent of all rapes and sexual assaults being reported to law enforcement (Catalano, 2006). These issues demonstrate that any review of reported rates of recidivism should be viewed with consideration of the inherent similarities and differences in methodologies across studies.

On a larger scale, Sample and Bray (2003, 2006) provided an analysis of a large sample of arrested adults that committed a total of nearly three million charges over a five-year period. Their results suggested that while property offenders had the highest rate of recidivism after five years (38.8%), less than seven percent of the sex offenders recidivated for the same sex offense five years following their initial sex offense arrest. Furthermore, the sex offenders also presented an even lower rate of general recidivism (45.1%) compared to most other offender types. These findings led Sample and Bray (2003, p. 76) to conclude that "based on rates of reoffending, sex offenders do not appear to be more dangerous than other criminal categories."

While sex offenders are a distinct offender type compared to violent, property, and drug offenders, it is important to recognize that not all sex offenders are alike in regards to their offenses. In fact, there is great diversity among sex offenders when looking at their preferences

¹Here it is important to note that there is variation acorss studies in the length of follow-up periods used by researchers to assess recidivism. Typically the follow-up periods used range between 2 and 5 years, although a few studies do use both shorter and longer periods.

for victims. For example, Furby et al. (1989) reported a lower recidivism rate for pedophiles compared to exhibitionists and aggressive offenders, and pedophiles offending against same sex victims had a higher rate of recidivism compared with opposite sex victimizing pedophiles.

McCarthy (2001) reported a higher rate of recidivism for extra-familial sex offenders compared to incest offenders. Sample and Bray (2006) examined recidivism for sex offenders, differentiating between seven categories of offenses: child pornography, child molestation, pedophilia, hebophilia, rape, registration violations, and other. Their results indicated that even after accounting for lock-up time, child molesters had the highest felony offense general recidivism rate five years following their initial offense (51.9%), followed by rapists (49.1%) and the "other" (48.6%) category. Yet, despite these seemingly high general recidivism rates, none of the sex offender sub-groups had a sex-offense specific recidivism rate greater than six percent.

An additional body of literature, drawing on data from self-reports provided by sex offenders, suggests that sex offenders do commit multiple offenses during their criminal careers (Abel, Becker, Mittelman, Cunningham-Rathern, Rouleau & Murphy, 1987;; Abel, Becker, Cunningham-Rathner, Mittelman & Rouleau, 1988; Ahlmeyer, Heil, McKee & English, 2000; English, Jones, Patrick & Pasini-Hill, 2003; Emerick & Dutton, 1993; Heil, Ahlmeyer & Simons, 2003; Weinrott & Saylor, 1991). Additionally, victimization studies that show significant portions of the population as sexual assault victims (Smith, Letourneau, Saunders, Kilpatrick, Resnick & Best, 2000; Tjaden & Thoennes, 2006; Finkelhor, Hoteling, Lewis, & Smith, 1990; Jonzon & Lindblad, 2005) also support the contention that sex offenders often commit multiple offenses over the course of their criminal careers. While some observers see these bodies of research as evidence of "recidivism", it is important to note that recidivism is typically defined as, and operationalized in research as, repeat offending after public detection and official

processing. Therefore, while it is true that many sex offenders do offend multiple times over the course of their lives, when looking at repeat offending following apprehension and criminal justice processing (e.g. conviction) there are substantially lower rates of repeat offending identified.

Turning toward risk factors related to recidivism among sex offenders, Hanson and Bussière's (1998) meta-analysis identified a host of risk factors for sex offender recidivism including: prior offenses, stranger victims, non-related victims, age, personality disorder, anger, early onset of sexual offending, and never having been married. Other researchers have reported that a prior criminal history for sex offending (Prentky, Knight, & Lee, 1997; Quinsey, Lalumiere, Rice, & Harris, 1995) and the diversity of the types of sex offenses committed are risk factors for recidivism (Abel, Mittelman, Becker, Rathner, & Rouleau, 1988). Lack of employment and employment instability has often at times been associated with sex offender recidivism as well (Maletzky, 1993; McGrath, 1991).

Regarding offense-specific risk factors, a preference from extrafamilial victims (Hanson, Steffy, & Gauthier, 1993; Proulx, Paradis, McKibben, Aubut, & Quimet, 1997) and older victims (Hanson & Bussière, 1998) have been shown to increase the likelihood for sex offender recidivism. Furthermore, Hanson and Bussière (1998) have identified additional victim selection factors such as preference for male victims as a variable that heightens a sex offender's risk of re-offending. Finally, higher levels of force used by the offender in their commission of the sex crime has been shown to have mixed support as an important risk factor in predicting sex offender recidivism (Hanson & Bussière, 1998; Sturgeon & Taylor, 1980).

Sex Offender Registration and Notification (SORN)

Most prominent among policy developments targeting sex offenders in recent years has been the proliferation of laws requiring the registration and public notifications of identities, characteristics and residential locations of sex offenders. While registration of offenders, including sex offenders, is not necessarily a new idea (Logan, 2009), the easily accessed nature of registries and accompanying community notification systems have characterized recent developments. Such legislation, commonly referred to as "Megan's Law", is intended to enhance supervision of sex offenders. As such, today in the United States there is a universal requirement for convicted sex offenders to register with law enforcement officials, have their identifying information posted on publicly accessible, internet-based sex offender registries, and (at least in some jurisdictions) depending on their clinically assessed "risk level" have community organizations and residents notified of their identities and residential locations (see Terry & Ackerman, 2009).

As a foundation for SORN is the belief and pursuit of deterrence. SORN is premised on the idea that by making information public about the identities, and residential locations, of known sex offenders the public will be better equipped to avoid situations in which these offenders have possibilities to re-offend. In this way offenders' opportunities for recidivism are restricted, and when combined with the public proclamation of such individuals as known sex offenders, they will be deterred from future offenses.

Only recently, however, have evaluations of SORN become available. The evidence arising from these evaluations has generally shown that such policies are limited in their effect on sex offender recidivism (Sample & Kadleck, 2008; Sandler, Freeman & Socia, 2008; Schram & Milloy, 1995; Tewksbury & Jennings, 2010; Vasquez, Maddan & Walker, 2008; Zgoba, Witt,

Veysey & Dalessandro, 2008). In contrast, Prescott and Rockoff (2008) draw on National Incident-Based Reporting System (NIBRS) data from 15 states to examine the effects of registration and notification on crime. They concluded that SORN does contribute to a reduction in the frequency of sex offenses and the incidence of offenses – primarily among known offenders' friends, acquaintances and neighbors -- by way of providing information to law enforcement. On the other hand, sex offender recidivism may actually be increased through the combination of imposition of social and financial costs (e.g. collateral consequences) on registrants and decreasing attractiveness of noncriminal activity. Additionally, Shao and Li (2006) drew on Uniform Crime Report (UCR) data from all 50 states over a 33 year period to assess the impact of sex offender registration laws on rates of rape reported to law enforcement. Their findings suggest that registration is linked to a 2 percent reduction in the rate of officially report rape. Both Prescott and Rockoff (2008) and Shao and Li (2006) report that as the size of the registry increases (hence, as time passes) sex offenses continue to decrease. In a review of all available studies at the time, Drake and Aos (2009) concluded that there may be "some indication" of SORN having a general deterrent effect (e.g. reduction in the incidence of offenses from the general population) on sex offenses in general, although no evidence suggests a specific deterrent effect (e.g. reduction in the incidence of offenses by the targeted offender).

Schram and Milloy provided the first of these studies evaluating the deterrent effect of SORN on sex offender recidivism in the state of Washington. Schram and Milloy's (1995) comparison of the sex recidivism rates for two groups of sex offenders (one released from prison three years prior to and one released three years post implementation of sex offender registration and notification) suggested that there were not any significant differences between the pre- and post-SORN releasees with regard to recidivating for sexually-based offenses. The only

identifiable difference between these two groups was the fact that offenders released under SORN appeared to be arrested more quickly compared with the sex offenders who were released prior to registration and community notification.

Focusing on sex offenses generally and not recidivism, Vasquez, Maddan and Walker (2008) compared state level rates of forcible rape in 10 states for a minimum of three years prior to and following implementation of SORN. Using a time-series analysis they show that rape rates were unaffected in six states (Arkansas, Connecticut, Nebraska, Nevada, Oklahoma and West Virginia), rates were statistically decreased following SORN implementation in three states (Hawaii, Idaho and Ohio), and in only one state (California) did the rape rate increase following implementation of SORN. Vasquez, et al. (2008, p. 189) conclude that SORN "seems to have had no uniform and observable influence on the number of rapes reported in the states analyzed". In a similarly designed study, Sandler et al. (2008) used a time-series analysis with monthly sex offense arrest counts drawing on criminal history records for all sex offenders arrested in New York between 1986 and 2006. The study focused on differentiating between offenders arrested prior to and following New York's SORN implementation in 1996. Their results showed that over 95% of sex offenses during the period were by first-time offenders. SORN had essentially no effect on arrests for rapists, child molesters, sexual recidivists or first-time sex offenders.

Focusing only on sex offender recidivism and being the only study to date that has examined sex offender recidivism using the trajectory methodological framework, Tewksbury and Jennings (2010) demonstrated little support for SORN's effectiveness on sex offender recidivism. More specifically, Tewksbury and Jennings (2010) examined recidivism rates for cohorts of sex offenders released from prison in Iowa for the five year period preceding (1992 – 1996) and following (1997-2001) implementation of SORN. Using semiparametric group-based

trajectory models this study showed that for both cohorts the most populous groups were offenders who did not recidivate in the five years following their release from prison (88.1% of pre-SORN releasees and 87.4% of post-SORN releasees). Among those who did recidivate, there were no differences between the pre- and post-SORN releases in their distribution across trajectory groups. Furthermore, there was a relatively small (8.2% in pre-SORN and 9.7% post-SORN) portion of the sample that recidivated at a very low rate. A third group, representing only about 3% of the total sample exhibited a higher rate of recidivism, approximately 1.5 convictions in the first year post-release, but then declining to less than one sex offense conviction per year thereafter. As these authors concluded, "not only is the sexual recidivism rate virtually identical prior to and following the implementation of SORN, but so too is the distribution of sex offenders into trajectory groups essentially identical" (p. 579). Or, in other words, the implementation of SORN did not show any effect on rates of recidivism or how many offenders were identified as high and low rate recidivists.

An additional comprehensive examination is provided by Zgoba et al. (2008; 2010) who investigated trends in sex offenses over two decades in New Jersey (10 years pre-and 10 years post- implementation of SORN), along with examining the re-offending behavior of 550 sex offenders released from incarceration between 1990 and 2000 and followed for six and a half years post-release. Zgoba et al.'s results indicated that the implementation of Megan's Law appeared to: (1) have no effect on the time to first arrest for those sex offenders who recidivated; (2) have no effect on reducing the number of victims in sexual offenses; and (3) have no effect on the type of sexual re-offense committed. Along with strong and highly significant results pointing to the ineffectiveness of SORN, Zgoba et al. also reported that the financial costs of establishing and maintaining the sex offender registration and notification system exceeded

\$555,000 in start-up costs and more than \$3.9 million in fiscal year 2007. Similarly, Agan (2007) analyzed the effectiveness of SORN using three separate datasets with similar findings. First, the results from the national panel dataset failed to demonstrate a reduction in the rate of rape post-SORN. Second, data from the Bureau of Justice Statistics that tracked sex offenders following their release from prison in 1994 did not show any significant benefit for SORN in terms of recidivism reduction. Finally, knowledge of where sex offenders lived in the community did not predict occurrences of sexual abuse in Washington, DC. Letourneau, Levenson, Bandyopadhyay, Sinha, and Armstrong (2010) also found that SORN status did not predict recidivism in the state of South Carolina for sample of 6,064 male sex offenders and controlling for time at risk.

In contrast to those studies reviewed above, a number of studies have shown a relationship between SORN and sex offender recidivism. For example, Freeman (2009) showed that New Yorks' SORN law was associated with higher recidivism rates and faster time to rearrest for sex offenders subject to registration and notification. On the other hand, Barnoski (2005) examined the influence of Washington's SORN law looking at differences between sex offenders released from prison before and after implementation and report a decrease in felony sex and violent felony convictions for offenders subject to SORN. Duwe and Donnay (2008) performed a study comparing 155 high risk sex offenders released under SORN with 125 sex offenders released prior to implementation of SORN and 155 offenders released after SORN implementation but not subject to community notification in Minnesota. Their results suggested that community notification reduced recidivism for those sex offenders subjected to community notification. In contrast, while a comparison of the notification group and the pre-notification group suggested a reduction in non-sexual and general recidivism, no reduction was seen for the

comparison of the notification and non-notification group. Overall, the results may well be attributable to historicity, and not the actions or consequences of community notification. In addition, it is important to note that Barnoski's (2005) and Duwe and Donnay's (2008) studies were both conducted in states (Washington and Minnesota, respectively) with risk assessment tiers where SORN is targeted toward a small number of higher risk offenders. Furthermore, a number of the studies reviewed above did not account for general crime trends and/or used inappropriate statistical techniques to answer the research question(s).

Costs of SORN

As Zgoba et al. (2008) clearly demonstrated, there are significant economic costs associated with sex offender registration and notification, which produce little or no increase in public safety. Furthermore, there is also a well-developed body of literature suggesting that sex offender registration and community notification has numerous costs in the form of collateral consequences for both sex offenders and their families. Surveys with registered sex offenders reveal that registration and community notification are associated with difficulties in intimate and social relationships, employment, housing, and mental health (Levenson, 2011; Levenson & Cotter, 2005; Levenson, D'Amora & Hern, 2007; Levenson & Hern, 2007; Mercado, Alvarez & Levenson, 2008; Mustaine, Tewksbury & Stengel, 2006; Tewksbury, 2004, 2005; Tewksbury & Lees, 2006, 2007; Tewksbury & Zgoba, 2010). When accompanied by laws restricting where registered sex offenders may live housing can be an especially difficult and stressful issue (Grubesic, Mack & Murray, 2007; Hughes & Burchfield, 2008; Hughes & Kadleck, 2008; Socia, 2011; Zandbergen & Hart, 2006, 2009; Zgoba, Levenson & McKee, 2009). What stands as the most commonly reported, and potentially most serious in regards to possibly facilitating recidivism, however, is the persistent sense of vulnerability and stress reported by registered sex

offenders (Robbers, 2009; Tewksbury & Lees, 2006, 2007; Tewksbury & Mustaine, 2009; Tewksbury & Zgoba, 2010). Additionally, the deleterious effects of SORN do not only impact sex offenders, but also have serious impacts on their families, including children (Farkas & Miller, 2007; Levenson & Tewksbury, 2009; Tewksbury & Levenson, 2009). The importance of recognizing such collateral consequences is centered on the belief that such potentially deleterious effects on offenders may in fact contribute to sex offenders failing to register and to the related potential for recidivism (Levenson, Letourneau, Armstrong & Zgoba, 2010), rather than facilitating community safety (the expressed purpose of SORN in the first place).

Collateral Consequences

Sex offender registration and community notification has been clearly shown to have accompanying collateral consequences for sex offenders (Burchfield & Mingus, 2006; Levenson & Cotter, 2005; Mercado, Alvarez, & Levenson, 2008; Tewksbury, 2004, 2005; Tewksbury & Lees, 2006; Tewksbury & Mustaine, 2006; Tewksbury & Zgoba, 2010; Zandbergen & Hart, 2006; Zevitz & Farkas, 2000). Several of these collateral consequences include difficulties in maintaining employment, relationship difficulties, public recognition and harassment/attack, and difficulties finding and maintaining suitable housing. Furthermore, prior research has demonstrated that registered sex offenders tend to disproportionately reside in the most socially undesirable neighborhoods, and in some situations are banned from certain jurisdictions altogether due to the residency restrictions imposed (Grubesic, Mack, & Murray, 2007). In addition, there has also been research suggesting that housing difficulties are more salient for sex offenders compared with non-sex offenders residing in the community (Hughes & Burchfield, 2008).

In this same vein, other collateral consequences related to residential restrictions are housing instability and limited access to employment opportunities, social services and social support (Levenson & Hern, 2007). Linden and Rockoff (2006, p. 39) have even suggested that "as sex offenders are increasingly clustered in specific areas, respective real estate value will start to decrease. This decrease in value will also influence neighborhood transition and ultimately lead to high levels of social disorganization." Furthermore, a growing amount of research has indicated that the residential locations of sex offenders are not static or long term either, and as many as one-half of registered sex offenders change their residences either between the time they are apprehended and when they appear on a sex offender registry, or while they are registered (Levenson & Cotter, 2005; Mustaine, Tewksbury & Stengel, 2006; Turley & Hutzel, 2001). In addition, due to residency restrictions, sex offenders are often forced to reside/relocate to more socially disorganized areas (Mustaine, Tewksbury, & Stengel, 2006). Extending these research findings further, Mustaine, Tewksbury, and Stengel (2006) have shown that neighborhoods characterized by a high concentration of registered sex offenders also appear to have greater proportions of non-white residents, higher unemployment rates, lower educational achievement levels, higher poverty rates, lower rates of home ownership, and lower median housing values.

Finally, sex offender registration and community notification have also been linked to depression, unemployment, lack of housing, loss of family and social relationships, public shaming, and violence (Mustaine et al., 2006; Simon, 1997; Tewksbury, 2004, 2005; Tewksbury & Lees, 2006; Tewksbury & Mustaine, 2006, 2007). Family members and the loved ones of registered sex offenders are also affected by these collateral consequences (Levenson & Tewksbury, 2009; Tewksbury & Levenson, 2009). Ultimately, while it is clear that the collateral

consequences reviewed above are likely to apply to all felons in general (Tewksbury & Lees, 2006), there is reason to believe that these adverse outcomes may have a greater impact on sex offenders (see Tewksbury, 2004, 2005; Tewksbury & Lees, 2006), yet research has largely ignored this latter empirical question. In addition, there is even less research that has directly compared registered sex offenders with non-sex offenders who reside in the community.

STUDY #1

The goals of Study #1 are to examine the recidivism rates of two samples of sex offenders, those released prior to sex offender registration and notification and a sample released under SORN in New Jersey. More specifically, Study #1 seeks to determine if sex offenders exhibit heterogeneity in their re-arrest trajectories following their release from prison. Or, in other words, are there distinct risk profiles among sex offenders with regard to their recidivism trajectories and are these profiles similar or different for sex offenders pre- and post- SORN? Additional analyses also include an examination of the influence of demographics, substance abuse, mental health issues, treatment history, sex offense incident characteristics, and criminal history on recidivism trajectories. As such, Study #1 seeks to expand upon Tewksbury and Jennings' (2010) trajectory analysis that focused only on sex recidivism by focusing on general recidivism trajectories. Furthermore, Study #1 goes beyond Tewksbury and Jennings' (2010) study by attempting to identify risk factors associated with recidivism trajectories that have been shown to be associated with recidivism among sex offenders more generally (Hanson & Bussière, 1998). Finally, Study #1 also provides an extension of Zgoba et al.'s (2008; 2010) examinations of recidivism risk using an alternative method (e.g., trajectory analysis). The final stage of the analysis investigates whether SORN status (e.g., being a sex offender released since the enactment of SORN) is a significant predictor of sex and/or general recidivism.

METHODS

Data

The data used were drawn from a variety of sources. Criminal histories for New Jersey as well as other U.S. jurisdictions were obtained through the New Jersey State Police Computerized Criminal History System and the National Crime Information Center's Interstate Identification Unit (see Appendix A). This allowed for recorded criminal acts to comprise those crimes that resulted in an arrest across the entire United States. Record checks were run using subjects' full names, birthdates, and race/ethnicity. Prison identification numbers, state criminal record identification numbers, and federal crime identification numbers were also used in these searches when they were available.

Sample

The sample for this study was provided by the New Jersey Department of Corrections (NJDOC hereafter). This study used two samples of sex offenders. The first sample included offenders released prior to the implementation of sex offender registration and notification, and the second sample included offenders released after the inception of registration and notification in New Jersey. The pre-SORN group included a random sample of 250 male sex offenders² released from prison by the NJDOC during the years 1990-1994, while the post-implementation group utilized the same sampling procedure and size and matched according to relevant demographics (age, race, and prior criminal history), with the exception that they were released during the years 1995-1999. Both samples were followed for approximately eight years post-

² Females were excluded from the study due to the low level of female sex offenders incarcerated at released in New Jersey. Also, it should be noted that the pre-SORN group did not have to register even when SORN was implemented for newly convicted offenders.

release for assessing recidivism. Randomization was done utilizing the universe of sex offenders within the Department of Corrections. The Information Technology Department provided an algorithm that was run and it generated a random sample of sex offenders for the respective years.

Dependent Variable

Official records of re-arrest were employed as the measure of recidivism in the eight years following each sex offender's release. It was necessary to follow these individuals for a sufficient amount of time post-release (e.g., eight years) to allow the sex offenders the "time" (opportunity) to recidivate in order to provide a more accurate assessment of their re-offending and to provide a more comprehensive follow-up period than that used in prior research (typically 3 to 6 years) (Schram & Milloy, 1995; Tewksbury & Jennings, 2010; Vasquez, et al., 2008; Zgoba et al., 2008; 2010) with the exception of Sandler, Freeman and Socia (2008) which contained 22 years of data. In addition, the decision was made to use eight years of follow-up data in order to ensure that all of the sex offenders regardless of pre-/post-SORN status and release cohort (e.g., 1990, 1991...1999) had a standardized follow-up time upon their release from prison. The individual criminal records were reviewed by trained research assistants, who participated in training sessions on reviewing offender folders and criminal history sheets. Parole violations and technical violations were excluded from the current study's measure of rearrest. As such, offenses that were counted as new offenses represented new criminal charges. An inter-rater reliability coefficient was established at r=.89, indicating a high degree of agreement among the three research assistants. The research assistants traded every fifth file and performed blind codings to ascertain a level of conformity. These efforts were made to increase the data validity. Any disagreements were reviewed by the Principal Investigator. It is

important to note here that the measure of recidivism that is used to estimate the recidivism trajectories that follow is the frequency of general recidivism in the eight years post-release from prison. In addition, sex offense recidivism is also included as a dependent variable in the final stage of the analysis.

Independent Variables

Data on a number of additional variables were also collected in order to determine their effect on recidivism. Included among the independent variables are measures (at the time of release from incarceration) of offender demographics (age in years, race, education level, marital status, employment, and whether the offender was raised in a two-parent household), substance abuse (alcohol and/or drug problems) and mental health issues (diagnosed mental health problems in childhood such as emotionally disturbed or developmental disorder/s and more common Axis 1 diagnoses such as major depressive disorder), receipt of treatment while incarcerated, sex offense incident characteristics (whether a child molester or rapist, victim sex, relationship to victim, whether a weapon was used in sex offense), and criminal history (whether offender had a prior sexual offense arrest, prior non-sex offense arrest, sentence length in months, and total months served).

Statistical Procedure

Semi-parametric trajectory modeling was the particular method used in this study to estimate the recidivism trajectories of the pre- and post-SORN releasees, and the statistical program for estimating these models is available as a macro in SAS (Nagin, 2005; Nagin & Land, 1993). Distinct from traditional time series analysis, this method permits the possibility of detecting distinct sub-groups of sex offenders that reveal different patterns of recidivism in the

eight years following their release from prison. There are three specific reasons that informed the decision to use the trajectory approach in the current study that demonstrate its superiority over other traditional classification techniques. First, traditional methods often use subjective classification schemes to determine their risk classifications. For instance, they identify the individuals who have an extreme score on a measurement scale or have 5+ arrests and classify these individual as high-risk offenders (Haapasalo & Tremblay, 1994; Tracy, Wolfgang, & Figlio, 1990). Thus, these risk classifications are determined a priori and cannot be evaluated for their presence in the data since they have already been defined/classified. Second, classifying individuals based on observable extreme scores or number of arrests a priori can potentially result in either under-fitting or over-fitting the data with respect to the number of unique groupings. Third, these traditional classification strategies offer no such method for determining or estimating the degree of precision with which each individual is uniquely assigned to a particular group. In addition, the trajectory method is a better suited approach than fixed effect panel modeling because of its ability to create unique behavioral profiles of individuals with distinct developmental pathways of risk and determine a 'person-based' precision estimate of their probability of belonging to a particular identifiable trajectory (e.g., posterior probability, which is further described below).

The parametric form of the trajectory model that is used for modeling count-based data such as the number of re-arrests is the ZIP version (Nagin, 2005), particularly when the distribution of the outcome variable is overdispersed, (i.e., the variance exceeds the mean) (Long, 1997). Once the parametric form of the trajectory model is established the modeler is required to estimate a number of trajectories across a series of functional forms including a constant, linear, quadratic, and cubic form. Finally, the exact number of trajectory groups is

based on an evaluation of the Bayesian Information Criteria (BIC) and an examination of the mean posterior probabilities of group assignment. The BIC values are estimated based on the following equation, where L is the maximum likelihood, n is the sample size, and k is the number of parameters (Nagin, 2005, p. 64):

BIC =
$$-2 \log (L) + \log (n) * k$$
.

Posterior probabilities are an individual's likelihood of belonging to a particular trajectory group. For example, each individual in the dataset has a probability that ranges from 0 to 1 of belonging to each of the finite number of trajectory groups that are determined. They are termed posterior probabilities because they are computed after the trajectory models and are estimated using the estimated coefficients observed in the trajectory model. The purpose of posterior probabilities is to provide a post-estimation measure of model precision. Nagin (2005) argues that average trajectory group-based posterior probabilities of >.70 indicates a high degree of precision in identifying which individuals belong to a particular trajectory group.

Stages of Analysis

First, the analysis will include a presentation of bivariate and descriptive statistics comparing the pre- and post-SORN releasees. This is followed by an estimation of the semi-parametric group-based models in order to identify which recidivism trajectories provide the best model fit for the patterns of the sex offenders' reoffending in the eight years following their prison release. Once the recidivism trajectories are determined then a chi-square test will be performed to assess whether the prevalence of the sex offenders classified in a particular recidivism trajectory is statistically different when comparing the pre-SORN releasees' trajectories with the post-SORN releasees' trajectories. Next, a series of chi-square tests and t-tests are estimated to evaluate whether a host of demographics, substance use and mental health

issues, treatment-relevant information, sex offense incident characteristics, and criminal history significantly discriminate the trajectories of recidivism. This is followed by an investigation into the factors that are significant for distinguishing trajectory group membership in a multivariate context using a logistic regression model. The final stage of the analysis presents two logistic regression models evaluating the ability of SORN cohort status (post-SORN rather than pre-SORN) to predict sex and/or general recidivism in the eight years post prison release controlling for relevant covariates.

RESULTS

Table 1 presents the bivariate descriptive comparisons for the pre- and post-SORN releasees across a host of demographics, substance use and mental health issues, treatment-relevant information, sex offense incident characteristics, criminal history, and recidivism.

Overall, the majority of the sex offenders were white, employed prior to offense, from two-parent-households, limited education and were not married. The sex offenders on average were in their late 30s. Roughly one in every four sex offenders had mental health problems, and alcohol and drug problems were prevalent in about half of the sex offenders. Nearly all of the sex offenders received treatment while they were incarcerated for their current sex offense. Furthermore, the majority of the sex offenders were child molesters and preferred female victims and family member victims. About a quarter of the sex offenders had a prior sex offense arrest and two-thirds had been arrested before for any type of offense. On average, the sex offenders were sentenced to approximately nine years, and they had served a little more than half of their sentence. Regarding recidivism, the prevalence of recidivating for another sex offense was low (13% or less) while nearly half of the sex offenders did recidivate with some type of offense.

According to a series of chi-square tests and t-tests, the pre- and post-SORN releasees were adequately matched across all of the demographic characteristics as intended. There were a significantly greater proportion of child molesters among the post-SORN releasees (χ^2 =4.15, p<.05), and a significantly greater proportion of rapists among the pre-SORN releasees (χ^2 =4.15, p<.05). Finally, the pre-SORN releasees were significantly more likely to have had a prior sex offense (χ^2 =4.14, p<.05).

Following the model selection criteria described previously, the semi-parametric group-based modeling procedure identified two distinct general recidivism trajectories for both the pre-and post-SORN releasees based on their frequency of re-arrest in the eight years following their release from prison (a low-risk trajectory group and a high-risk trajectory group). The mean posterior probabilities (which are a measure of model precision) are provided in Table 2. The mean posterior probabilities for each of the trajectory groups were all well above the 0.70 cutoff described by Nagin (2005) when arriving at the ultimate model selection decision.

Table 1. Descriptive Statistics of Pre- and Post-SORN Releasees.

Variables	Pre-SORN Releasees	Post-SORN	
, artaores	$\frac{(n=247)}{(n=247)}$	Releasees	
	(10 = 11)	$\frac{(n=248)}{(n=248)}$	
	<u>M/%</u>	(11 = 10)	t/χ^2
		<u>M/%</u>	, , , , , , , , , , , , , , , , , , ,
Demographics			
Gender			
Male	100.0%	100.0%	
Race			
Non-White	48.2%	47.4%	0.03
Age at release	37.90	39.69	-1.64
Two parent household	66.9%	65.4%	0.13
GED/High School Diploma Only	32.0%	33.1%	0.07
Married	33.6%	33.9%	0.01
Employed prior to offense	63.6%	61.8%	0.17
Substance Use and Mental Health			
Issues			
Mental health problems	20.6%	25.5%	1.68
Drug problems	47.2%	42.7%	0.97
Alcohol problems	50.6%	43.5%	2.47
Treatment-Relevant Information			
Received treatment while	95.2%	91.9%	2.03
incarcerated			
Sex Offense Incident Characteristics			
Child molester	76.1%	83.5%	4.15*
Rapist	23.9%	16.5%	4.15*
Male victim/s	15.0%	16.1%	0.12
Female victim/s	82.2%	81.5%	0.05
Male and female victims	2.8%	2.4%	0.08
Stranger victim	18.2%	14.1%	1.54
Family member victim	46.6%	50.4%	0.73
Acquaintance victim	32.4%	33.9%	0.12
Significant other victim	2.0%	1.6%	0.12
Weapon used in sex offense	16.0%	10.5%	3.18
Criminal History			
Prior sex arrest	27.5%	19.8%	4.14*
Prior non-sex arrest	66.4%	64.1%	0.29
Sentence length (in months)	109.64	101.27	1.47
Time served (in months)	53.39	58.28	-1.36
Recidivism			
Sex recidivism (prevalence)	13.0%	9.7%	1.33
General recidivism (prevalence)	51.4%	48.0%	0.58
General recidivism (frequency)	1.40	1.49	-0.42

^{*}p<.05 **p<.01 ***p<.001

Table 2. Mean Posterior Probabilities for Group Assignment.

Trajectory Group	Low-Risk	High-Risk
Pre-SORN Releasees		
Low-Risk	0.97 (0.99)	0.03 (0.00)
High-Risk	0.15 (0.08)	0.84 (0.92)
Post-SORN Releasees		
Low-Risk	0.95 (0.99)	0.05 (0.00)
High-Risk	0.08 (0.02)	0.93 (0.98)

Figures 1 and 2 present a graphical display of the general recidivism trajectories for the pre- and post-SORN releasees respectively, and the mean differences in the frequency of rearrests are presented by year by trajectory group for the pre- and post-SORN releasees in Table 3.

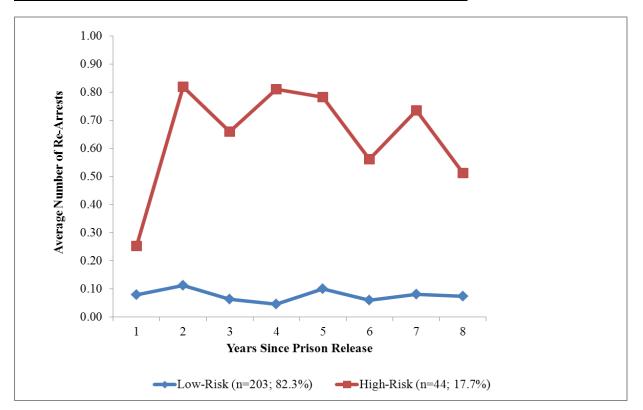


Figure 1. Recidivism Trajectories of Pre-SORN Releasees (n=247).

As can be seen in Figures 1 &2 and Table 3, the trajectories can be described in terms of two levels of risk. For both the pre- and post-SORN releasees the most prevalent trajectory is the low-risk trajectory (82.3% and 79.5% respectively). This low-risk trajectory includes non-recidivists as well as those identified to be low-risk who perhaps accumulated one arrest in one of the eight years post-prison release but did not demonstrate a trajectory of recidivism that was statistically determined to be high-risk. The sex offenders in the low-risk trajectories on average did not accumulate greater than approximately one-tenth of an arrest in any of the eight years following their release from prison for a sex offense. In order to put these numbers into context, the sex offenders identified as low-risk (n=203 pre-SORN sex offenders; n=197 post-SORN sex offenders) did not accumulate more than 20 arrests as a group (203*.10=20.3 or 197*.10=19.7) in *any* given year in the eight years following their release from prison.

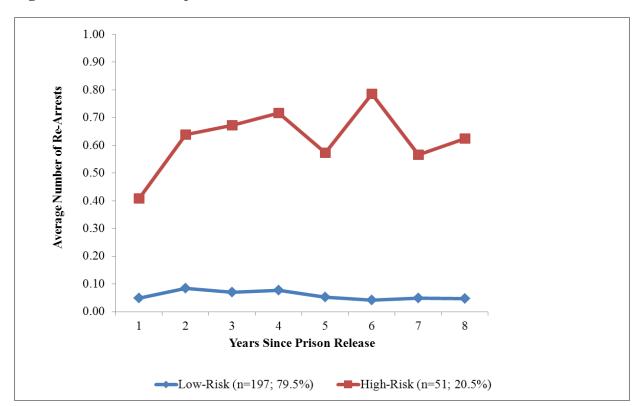


Figure 2. Recidivism Trajectories of Post-SORN Releasees (n=248).

Comparatively, the pre- and post-SORN high-risk trajectories (17.7% and 20.5% respectively) indicate that among those sex offenders who demonstrate high-risk of recidivism post-prison release, that the majority of these sex offenders recidivate early on and there is a noticeable increase in their frequency of recidivism from year 1 to year 2 post-release.

Specifically, the pre-SORN releasees averaged .25 arrests in year 1 and .82 arrests in year 2.

Comparatively, the post-SORN releasees averaged .41 arrests in year 1 and .64 arrests in year 2.

In the remaining years these sex offenders demonstrate a relatively stable high-risk for recidivating with the exception being an additional peak in year 7 for the pre-SORN releasees and in year 6 for the post-SORN releasees. As a point of comparison to the low-risk trajectory group, the high-risk sex offenders accumulated between 11 (n=44*.25) and 36 arrests (n=44*.82) (pre-SORN sex offenders) and 21 (n=51*.41) and 40 (n=51*.79) arrests (post-SORN sex

offenders) as a group in *each* of the eight years following their release from prison. This comparison is striking considering that there were nearly four times as many low-risk offenders as high-risk offenders, yet these high-risk offenders managed to accumulate a significantly and substantively greater number of re-arrests following their release from prison.

Table 3. Mean Re-Arrests by Trajectory Group Assignment.

Trajectory Group	Low-Risk	High-Risk	<u>t test</u>
Pre-SORN Releasees			
Mean Re-Arrests (Post Release)			
Year 1	0.08	0.25	-2.193*
Year 2	0.11	0.82	-6.502***
Year 3	0.06	0.66	-5.157***
Year 4	0.05	0.81	-4.461***
Year 5	0.10	0.78	-4.263***
Year 6	0.06	0.56	-3.659**
Year 7	0.08	0.74	-3.230**
Year 8	0.07	0.51	-4.142***
Post-SORN Releasees			
Mean Re-Arrests (Post Release)			
Year 1	0.05	0.41	-3.450**
Year 2	0.09	0.64	-3.907***
Year 3	0.07	0.67	-5.152***
Year 4	0.08	0.72	-4.173***
Year 5	0.05	0.57	4.713***
Year 6	0.04	0.79	-3.879***
Year 7	0.05	0.57	-4.404***
Year 8	0.05	0.62	-3.213**

^{*}p<.05 **p<.01 ***p<.001

Table 4 presents the results of a chi-square test to determine if there was a significant difference in the proportion of sex offenders that were statistically identified to demonstrate either a low or high-risk trajectory of recidivism. The results suggested that the prevalence of sex offenders in the low-risk and high-risk trajectories for the pre- and post-SORN releasees was not significantly different (χ^2 =0.60, p<.44).

Table 4. Cross-Tabulation of Recidivism Trajectories for Pre- and Post-SORN Releasees.

Trajectory Group	Pre-SORN Releasees	Post-SORN Releasees
Low-Risk High-Risk	82.3% (n=203) 17.7% (n=44)	79.5% (n=197) 20.5% (n=51)
Total	100% (n=247)	100% (n=248)

Note: Number of sex offenders and column percentages in parentheses for each cell indicated ($\chi^2 = 0.60$, p = 0.44).

The next series of results evaluate the significance of demographics, substance use and mental health issues, treatment-relevant information, sex offense incident characteristics, and criminal history for discriminating the low-risk trajectories from the high-risk trajectories. The results of this series of chi-square tests and t-tests are presented in Table 5.

The results suggested that nearly all of the variables significantly discriminated the low-risk trajectories from the high-risk trajectories, and these findings were observed for the pre- and post-SORN releasees. Specifically, there was a significantly greater proportion of non-whites and non-married sex offenders in the high-risk trajectories. Comparatively, there were a

significantly greater proportion of sex offenders that were reared in two-parent households and employed prior to being incarcerated in the low-risk trajectory. In addition, there were a significantly greater proportion of sex offenders with drug problems in the high-risk trajectory.

Table 5. Covariates Associated with Trajectory Group Membership.

Variables	<u>Pre-SORN</u> <u>Releasees</u>	<u>Pre-SORN</u> <u>Releasees</u>	<u>Post-SORN</u> <u>Releasees</u>	Post-SORN Releasees	t/χ^2
	Low-Risk	High-Risk	<u>Low-Risk</u>	High-Risk	ι/χ
	<u>M/%</u>	<u>M/%</u>	<u>M/%</u>	<u>M/%</u>	
Male					
Non-White	42.4%	75.0%	40.8%	72.5%	15.43***
Age at release	39.57	30.20	41.57	32.39	7.60***/6.35***
Γwo parent household	70.9%	48.8%	68.6%	53.1%	7.70**
GED/High School Diploma Only	33.5%	25.0%	32.0%	37.3%	1.20
Married	38.4%	11.4%	41.1%	5.9%	11.87**
Employed prior to offense	70.0%	33.3%	65.3%	49.0%	20.17***
Mental health problems	22.0%	14.0%	25.5%	25.5%	1.40
Orug problems	42.1%	70.5%	38.1%	60.8%	11.68**
Alcohol problems	49.3%	56.8%	42.6%	47.1%	0.83
Received treatment while incarcerated	95.2%	95.2%	91.4%	93.9%	0.01
Child molester	82.3%	47.7%	7.3%	68.6%	23.73***
Rapist	17.7%	52.3%	12.7%	31.4%	23.73***

Male victim/s	17.2%	4.5%	17.8%	9.8%	4.58*
Female victim/s	79.8%	93.2%	9.2%	90.2%	4.42*
Male and female victims	3.0%	2.3%	3.0%	0.0%	0.06
Stranger victim	14.3%	36.4%	9.6%	31.4%	11.83**
Family member victim	50.7%	27.3%	4.8%	33.3%	8.00**
Acquaintance victim	32.5%	31.8%	3.5%	35.2%	0.01
Significant other victim	1.5%	4.5%	2.0%	0.0%	1.72
Weapon used in sex offense	13.0%	29.5%	8.7%	17.6%	7.35**
Prior sex arrest	27.6%	27.3%	19.8%	19.6%	0.01
Prior non-sex arrest	61.1%	90.9%	57.9%	88.2	14.42***
Sentence length (in months)	105.47	128.86	102.07	98.18	-1.90/0.38
Time served (in months)	51.22	63.32	58.82	56.20	-1.65/0.35
Sex recidivism (Prevalence)	10.8%	22.7%	7.1%	19.5%	4.53*
General recidivism (Prevalence)	40.9%	100.0%	34.5%	100.0%	50.59***
General recidivism (Frequency)	0.57	5.23	0.48	5.37	-11.93***/-10.18***
General recidivism (Frequency)	0.57	5.23	0.48	5.37	-11.93***/-10.18***

^{*}p<.05 **p<.01 ***p<.001

Note. The percentages in each cell represent the prevalence/percentage of that particular measure in each specific group. For example, 42.4% of the Pre-SORN, Low-Risk, Sex offender releasees were non-white. The t-test results are reported in order of presentation, e.g., the first test statistic corresponds to a comparison between the low and high-risk pre-SORN trajectories and the second test statistic corresponds to a comparison between the low and high risk post-SORN trajectories.

Turning toward the sex offense incident characteristics, there was a significantly greater proportion of rapists in the high-risk trajectory whereas there were a significantly greater proportion of child molesters in the low-risk trajectory, although there were a larger percentage of child molesters in the post-SORN high-risk trajectory compared with the pre-SORN high-risk trajectory. Female victims and stranger victims were the more frequent victims for the sex offenders in the high-risk trajectory. Furthermore, a greater proportion of sex offenders in the high-risk trajectory had used a weapon when committing the sex offense for which they were released from prison, and a substantially greater proportion of sex offenders who had a prior non-sex offense criminal history were in the high-risk trajectory. Nearly eleven percent of pre-SORN sex offenders and 7.1% of the post-SORN sex offenders in the low-risk trajectory recidivated sexually and 40.9% (pre-SORN) and 34.5% (post-SORN) recidivated generally. Finally, the results indicated that a significantly greater proportion of sex offenders in the high-risk trajectory recidivated for a sex offense post-prison release, and the mean frequency of re-arrests were significantly greater for the sex offenders in the high-risk trajectory.

In the final stage of the analysis a logistic regression model was estimated that included the significant risk factors along with prior sex offending for discriminating the trajectories in the previous stage of the analysis. This analysis evaluates the importance of demographics, substance use and mental health issues, treatment-relevant information, sex offense incident characteristics, and criminal history in a multivariate context. The regression results revealed the same degree of consistency in how the variables significantly distinguished the high-risk trajectory from the low-risk trajectory. For example, age was negatively related to being classified in a high-risk trajectory for the pre- (b=-0.080, s=0.032, p<.05) and post-SORN releasees (b=-0.052, s=0.430, p<.05) indicating that younger sex offenders were more likely to

be in the high-risk trajectory. In contrast, having a prior non-sex arrest significantly increased the likelihood of a sex offender being classified in a high-risk trajectory for the pre- (b=1.293, p=0.623, p

Table 6. Distinguishing High-Risk from Low-Risk Trajectories of Recidivism.

Variables	<u>Pre-SORN</u> <u>Releasees</u>			Post-SORN Releasees		_
variables	Reteasees			Reteasees		
	<u>b</u>	<u>SE</u>	Exp(B)	<u>b</u>	<u>SE</u>	Exp(B)
Male						
Non-White	0.474	0.486	1.607	0.724	0.430	2.062
Age at release	-0.080*	0.032	0.923	-0.052*	0.026	0.949
Two parent household	-0.729	0.447	0.482	-0.335	0.416	0.715
Married	-0.581	0.624	0.559	-1.709**	0.668	0.181
Employed prior to offense	-0.776	0.466	0.460	-0.189	0.401	0.828
Drug problems	0.264	0.457	1.302	0.519	0.402	1.680
Rapist	0.752	0.601	2.122	0.260	0.546	1.297
Female victim/s	1.765*	0.920	5.841	0.380	0.622	1.462
Stranger victim	-0.046	0.582	0.955	0.355	0.591	1.426
Family member victim	0.429	0.607	1.536	-0.416	0.504	0.660
Weapon used in sex offense	0.508	0.565	1.662	0.215	0.620	1.240
Prior sex arrest	0.080	0.499	1.083	-0.395	0.571	0.674
Prior non-sex arrest	1.293*	0.623	3.664	1.310*	0.530	3.705
Nagelkerke R ²		0.407			0.397	

^{*}p<.05 **p<.01 ***p<.001.

The final stage of the analysis is presented in Table 7. The results from two logistic regression models indicated that SORN cohort status (e.g., being a sex offender released since

the enactment of SORN) did not significantly predict whether or not a sex offender recidivated for either a sex offense or any offense in the eight years post release from prison. The only covariates that were significant for predicting sex recidivism were age (b=-0.061, se=0.021, p<.01) and prior criminal history for sex offending (b=1.340, se=0.366, p<.001). Or in other words, sex offenders who have been released from prison after serving time for a sex offense who also have prior sex offending criminal histories (e.g., they are sex recidivists already) are significantly more likely to recidivate (again) for a sex offense post prison release than are sex offenders who do not have prior sex offending criminal histories. Similarly, age significantly predicted general recidivism (b=-0.075, se=0.013, p<.001) along with employed prior to offense (b=-0.482, se=0.245, p<.05), having drug problems (b=0.498, se=0.236, p<.05), and prior criminal history for a non-sex offense (b=1.174, se=0.261, p<.001).

Table 7. Logistic Regression of Sex and General Recidivism on SORN Cohort Status.

Variables		<u>Sex</u> <u>Recidivism</u>			General Recidivism	
	<u>b</u>	<u>SE</u>	Exp(B)	<u>b</u>	<u>SE</u>	Exp(B)
Male						
Non-White	-0.068	0.351	0.934	0.614	0.238	1.848
Age at release	-0.061**	0.021	0.941	-0.075**	0.013	0.927
Two parent household	0.177	0.361	1.193	-0.084	0.252	0.920
Married	0.137	0.443	1.147	-0.046	0.270	0.955
Employed prior to offense	0.230	0.355	1.259	-0.482*	0.245	0.617
Drug problems	0.241	0.345	1.273	0.498*	0.236	1.646
Rapist	0.425	0.446	1.530	0.109	0.374	1.115
Female victim/s	-0.074	0.479	0.928	0.109	0.336	1.115
Stranger victim	0.492	0.456	1.636	0.032	0.392	1.032
Family member victim	-0.404	0.431	0.667	-0.398	0.277	0.672
Weapon used in sex offense	-0.096	0.472	0.908	0.030	0.391	1.031
Prior sex arrest	1.340***	0.366	3.818	0.286	0.295	1.331
Prior non-sex arrest	0.021	0.400	1.022	1.174***	0.261	3.234
Post-SORN Cohort	-0.139	0.329	0.870	-0.046	0.229	0.955
Nagelkerke R ²		0.165			0.402	

^{*}p<.05 **p<.01 ***p<.001.

Sex Offenders: Recidivism & Collateral Consequences 47

STUDY #2

Study #2 provides an examination of whether the recidivism trajectories post-prison release for post-SORN sex offenders are similar to or different from the recidivism trajectories post-prison release for post-SORN non-sex offenders who are released from prison via parole. Furthermore, Study #2 also specifically focuses on whether or not a series of collateral consequences are experienced similarly or differently among these post-SORN sex and post-SORN non-sex offender parolees.

METHODS

Data

Similar to Study #1, recidivism/re-arrest data were obtained through the New Jersey State Police Computerized Criminal History System and the National Crime Information Center's Interstate Identification Unit (see Appendix B). Record checks were run using subjects' full names, birthdates, and race/ethnicity. Prison identification numbers, state criminal record identification numbers, and federal crime identification numbers were used in these searches when they were available. Reentry variables for the sample were available from two earlier studies and were compiled to answer the relevant post-release questions. Inmate folders were also reviewed for additional information for the offenders who returned to state incarceration.

Sample

Random samples of 247post-SORN sex offenders and 250 post-SORN non-sex offenders released from prison in New Jersey via parole during 1995-1999 were drawn from the New

Jersey Department of Corrections' computerized systems.³ Randomization was done utilizing the universe of sex offenders within the Department of Corrections. The Information Technology Department provided an algorithm that was run and it generated a random sample of sex offenders for the respective years. Matching was done utilizing bivariate statistics on the generated samples characteristics and prior criminal histories.

Dependent Variable

Consistent with Study #1, official records of criminal histories were utilized as the outcome measure of recidivism in the eight years following each sex and non-sex offender's release from the New Jersey Department of Corrections. Re-arrest was chosen as the measure of recidivism; while there is a chance that some of the re-arrests did not continue through to convictions or incarcerations, the decision was made to use this measure due to the low base rate of reoffending and the low rate of reporting sexual crimes.

Independent Variables

Data on a number of collateral consequences were collected for the random sample of post-SORN sex offender releasees and the random sample of post-SORN non-sex offenders released via parole in order to determine their effect on recidivism along with other recidivism related information. Where available, these variables included: post-release employment, post-release homelessness, post-release housing (owner-occupied, renter-occupied), living arrangements (lives alone, lives with family, lives with friends, lives in group facility), and

³ All sex offenders included were either rapists or child molesters. The sex offender sample has only 247 individuals because three of the sex offenders were exhibitionists, not rapists or child molesters. Therefore, so as to keep the group consistent and data clean, these three individuals were removed from the analysis for this study. Additionally, we do not report the offenses for the non-sex offender group as this was not a sampling criteria and is unknown.

residential relocations (e.g., moves post-release). In addition, various types of demographic information were also included.

Statistical Procedure

Similar to Study #1, semi-parametric trajectory modeling was used in Study #2 to estimate the recidivism trajectories of the post-SORN sex offender and non-sex offender releasees, and the statistical program for estimating these models is available as a macro in SAS (Nagin, 2005; Nagin & Land, 1993).

Stages of Analysis

The first stage of the analysis for Study #2 will resemble that of Study #1, such that it includes a presentation of summary statistics for the two samples such as race, age, and the frequency of recidivism. Similarly, the second stage of the analysis explores the group-based trajectories of recidivism in the eight years following the post-SORN sex and non-sex offenders' release from the New Jersey Department of Corrections. The final stage of the analysis provides an investigation into the collateral consequences that sex offenders and non-sex offenders experience. Ultimately, these stages of analysis allow for a determination of whether or not the recidivism trajectories differ for registered sex offenders compared to non-sex offenders who are released on parole, yet who are not subject to sex offender registration and community notification. In addition, the final stage of the analysis provides an indication of whether certain collateral consequences are experienced more or less for sex offenders compared to non-sex offenders under community supervision.

RESULTS

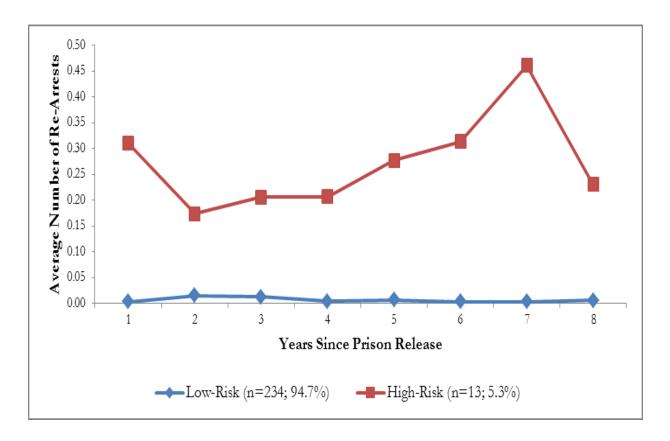
Table 8 provides the descriptive statistics for the two samples. Specifically, nearly half of the non-sex offenders were non-white compared to one-third of the sex offenders who were classified as non-white ($\chi^2 = 13.46$, p < .001). The sex offenders, on average, were approximately two and one-half years older than the non-sex offenders (M= 38.13 versus M= 35.62; t = -2.56, p < .01). Finally, the non-sex offenders, on average, were re-arrested significantly more frequently post-release compared to the sex offenders (M= 0.23 versus M= 0.58; t = 4.05).

<u>Table 8. Descriptive Statistics for Post-SORN Sex Offender and Non-Sex Offender Releasees.</u>

Variables	Sex Offender Post-SORN Releasees (n=247) M/%	Non-Sex Offender Post-SORN Releasees (n=250) M/%	t/χ^2
Domographics			
Demographics Gender			
Male	100.0%	100.0%	
Race	100.070	100.070	
Non-White	36.4%	52.8%	13.46***
Age at Release	38.13	35.62	-2.56**
Outcome			
Recidivism Frequency	0.23	0.58	4.05***

Figures 3 and 4 present a graphical display of the recidivism trajectories for the post-SORN sex and non-sex offender releases, respectively. As can be seen, the trajectories can be described in terms of two levels of risk, low risk and high risk.

<u>Figure 3. Recidivism Trajectories of Post-SORN Sex Offender Releasees (n=247).</u>



For both the post-SORN sex offender and non-sex offender releasees the most prevalent trajectory is the low-risk trajectory (94.7% and 72.8% respectively). In contrast, sex and non-sex offenders in the high risk trajectories (5.3% and 27.2%) tend to offend early upon release, increase their frequency of recidivism over time, and peak in year 7 post-release for the sex offenders and peak in year 4 for the non-sex offenders. Mean posterior probabilities for the trajectory models are provided in Table 9, and all of the values are considerably higher than the

0.70 threshold offered by Nagin (2005) suggesting that these models perform well in differentiating low risk offenders from high risk offenders.

Figure 4. Recidivism Trajectories of Post-SORN Non-Sex Offender Releasees (n=250).

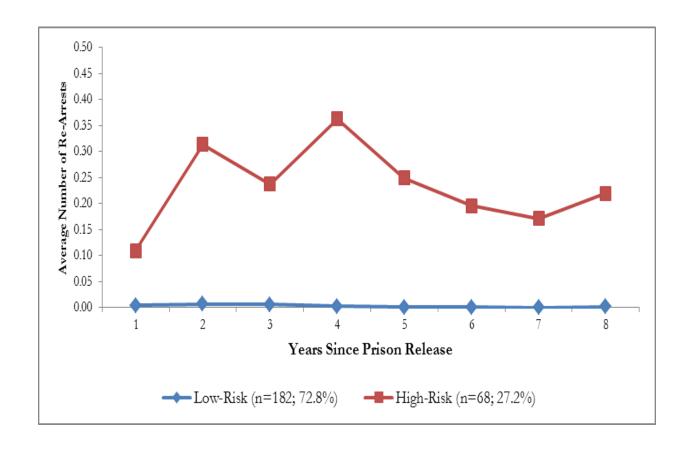


Table 9. Mean Posterior Probabilities for Trajectory Group Membership.

Trajectory Group	<u>Low-Risk</u>	<u>High-Risk</u>
Sex Offender Post-SORN	Releasees	
Low-Risk	0.97	0.03
High-Risk	0.02	0.98
Non-Sex Offender Releas	sees	
Low-Risk	0.94	0.06
High-Risk	0.06	0.94

Upon first glance the trajectories appear to be substantively similar between the sex and non-sex offenders. However, there is an observable difference in the percentage of offenders who are classified into the high and low-risk trajectories (see Table 10). Specifically, 94.7% of the sex offenders are identified as low risk compared to less than 75% of the non-sex offenders. Furthermore, there are roughly five times as many non-sex offenders in the high risk trajectory compared to the number of sex offenders in the high risk trajectory. A chi-square analysis revealed that this difference is indeed statistically significant ($\chi^2 = 43.83$, p < 0.001).

<u>Table 10. Cross-Tabulation of Recidivism Trajectories for Post-SORN Sex Offender and</u>
Non-Sex Offender Releasees.

Trajectory Group	<u>Sex Offender</u> <u>Post-SORN Releasees</u>	Non-Sex Offender Releasees
Low-Risk High-Risk	94.7% (n=234) 5.3% (n=13)	72.8% (n=182) 27.2% (n=68)
Total	100% (n=247)	100% (n=250)

Note. $(\chi^2 = 43.83, p < 0.001)$.

The final stage in the analysis is presented in Table 11. Descriptively speaking, a smaller percentage of post-SORN sex offenders lived with friends post release compared to post-SORN non-sex offenders. Comparatively, a larger percentage of post-SORN sex offenders lived in owner-occupied housing and had moved post-release compared to post-SORN non-sex offenders. Results from a series of chi-square analyses demonstrated that the percentage of post-SORN sex offenders living with friends post-release was significantly less than the percentage of post-SORN non-sex offenders living with friends post-release ($\chi^2 = 3.33$, p < 0.10). In addition, the percentages of post-SORN sex offenders living in a group facility post-release ($\chi^2 = 4.87$, p < 0.05) and having moved post-release ($\chi^2 = 4.79$, p < 0.05) were significantly greater than the percentages of post-SORN non-sex offenders who were living in a group facility or had moved post-release.

Table 11. Comparing Collateral Consequences Experienced by Post-SORN Sex Offender and Non-Sex Offender Releasees Post Prison Release.

Variables	<u>Sex Offender</u> <u>Post-SORN Releasees</u>	<u>Non-Sex Offender</u> <u>Post-SORN Releasees</u>	
	<u>%</u>	<u>%</u>	χ²
Employed	37.2%	40.9%	0.66
Owner-Occupied Housing	40.9%	36.4%	0.91
Renter-Occupied Housing	53.6%	58.3%	0.92
Homeless/Transient	5.5%	5.3%	0.003
Lives Alone	35.4%	33.5%	0.17
Lives with Family	40.2%	43.7%	0.55
Lives with Friends	11.4%	17.5%	3.33+
Lives in Group Facility	9.2%	3.9%	4.87*
Lives in Other Type of Housing	3.9%	1.5%	2.47
Moved	5.4%	1.7%	4.79*

^{**}p<.10 *p<.05 **p<.01 ***p<.001

CONCLUSIONS

The findings from these two studies provide results that are informative for public policy regarding the use and expected benefits of sex offender registration and notification. Study #1 sought to examine if sex offenders exhibit heterogeneity in their general recidivism trajectories as has been found in their sex recidivism trajectories (Tewksbury & Jennings, 2010), and if these trajectories vary according to SORN status. Furthermore, Study #1 made an additional effort to

expand upon Tewksbury and Jennings' (2010) study and Zgoba et al.'s (2008; 2010) studies by distinguishing the risk factors associated with recidivism trajectories that have been shown to be associated with recidivism among sex offenders more generally (Hanson & Bussière, 1998). Finally, Study #1 assessed whether SORN status was a significant predictor of sex recidivism and recidivism in general. The noteworthy results from Study #1 are further elaborated on below.

In these samples of sex offenders released from prison in New Jersey prior to and following the implementation of sex offender registration and notification, it is clear that there are limited observable benefits of SORN regarding sex recidivism and general recidivism. With an overall low rate of sex offense recidivism, SORN status failed to predict which sex offenders would re-offend sexually. These results are consistent with previous research which has argued that sex offenders have relatively low rates of recidivism, typically significantly lower than non-sex offenders (Furby, et al., 1989; Hanson & Morton-Bourgon, 2005; Langevin, et al., 2004; Sample & Bray, 2003, 2006). Furthermore, SORN status was not a significant predictor of which sex offenders would re-offend in general including non-sexual recidivism.

In addition to the examination of whether sex offenders recidivate (yes or no) overall, this analysis demonstrates that for sex offenders released from prison prior to and after implementation of SORN, there are clearly two distinguishable groups of sex offenders in regards to patterns of general recidivism. For both samples, more than three-quarters of sex offenders are identified as low-risk of general recidivism, with low rates of repeat criminal offenses. In contrast, the high-risk group of offenders is more likely to commit future criminal offenses, commit significantly more offenses, and to do so fairly quickly following release from prison. As such, the results of this study suggest that not only is sex recidivism low among sex

offenders regardless of SORN status, general recidivism trends are largely unaffected by SORN as well. This is an important finding as the deterrence argument is likely to still apply to general recidivism trends. Sex offenders are under greater surveillance and have an increased number of restrictions once released to the community, so there is the potential that this policy would also provide a specific and/or general deterrent benefit for both sex and non-sex recidivism. This latter point has yet to have been addressed in the sex offender literature using the trajectory methodology framework specifically. Therefore, this study is the first of its kind to demonstrate that SORN as a policy has little effect on two related and socially important recidivism outcomes using the trajectory methodology: 1) reducing/deterring sexual recidivism; and 2) reducing/deterring recidivism in general.

The trajectory results have implications for policy makers and practitioners in that they suggest areas for prevention/intervention. Specifically, policy makers and treatment providers should focus their efforts on those sex offenders identified as belonging to the high-risk trajectory with a particular interest in targeting the risk factors related to a high-risk trajectory. These efforts should prove the most beneficial for early identification, treatment, and recidivism reduction among those that demonstrate the highest risk of re-offending and who are responsible for the lion's share of recidivism among sex offenders who are released to the community (e.g., targeted rather than universal application of SORN seems a viable alternative).

The results reported here regarding the predictors of whether sex offenders are classified into the low-or high-risk trajectory provide valuable information. These risk factors are largely consistent with those reported in previous research that has examined recidivism among sex offenders more generally (Abel et al., 1988; Hanson & Bussière, 1998; Hanson et al., 1993; Prentky et al., 1997; Proulx et al., 1997; Quinsey et al., 1995; Sturgeon & Taylor, 1980). For

example, sex offenders with diagnosed drug problems, who are rapists rather child molesters, who have female victims and victims who are either strangers or non-family members and who have been previously arrested for a non-sex offense significantly distinguish the high-risk sex offenders from those sex offenders considered to be low-risk – hence being more frequent and shorter survival recidivists. Furthermore, the multivariate results suggested that the predictors of membership in the high-risk classification were the demographic factors of younger age and having a prior non-sex offense criminal history for both samples. In addition, being married was a protective factor for the post-SORN releasees, which may indicate that under the current SORN policies being married and having an in-place support system may alleviate some of the psychological and social collateral consequences. Finally, having a female victim significantly predicted membership in the high-risk classification for the pre-SORN releasees, and this is likely the result of having a greater percentage of rapists in the pre-SORN sample who overwhelmingly victimized females. Finally, and highly important for policy, SORN cohort status (e.g., being a sex offender released since the enactment of SORN) did not significantly predict sex or general recidivism.

Study #2 sought to investigate whether the recidivism trajectories post-prison release for post-SORN sex offenders were similar to or different from the recidivism trajectories post-prison release for post-SORN non-sex offenders who are released from prison via parole. The results suggested that while the type of recidivism trajectories was similar, e.g., a low risk and a high risk trajectory, the percentages of offenders who were classified in the high risk trajectory varied across samples. Specifically, a much larger percentage of non-sex offenders were classified in the high risk trajectory compared to the sex offenders. Furthermore, another main focus of Study #2 involved an examination of whether or not a series of collateral consequences were

experienced similarly or differently among post-SORN sex and post-SORN non-sex offender parolees. Consistent with prior research (Burchfield & Mingus, 2006; Levenson & Cotter, 2005; Mercado, Alvarez, & Levenson, 2008; Tewksbury, 2004, 2005; Tewksbury & Lees, 2006; Tewksbury & Mustaine, 2006; Tewksbury & Zgoba, in press; Zandbergen & Hart, 2006; Zevitz & Farkas, 2000), these results indicated that while sex offenders and non-sex offenders share the experience of collateral consequences and enhanced community supervision post-prison release, several collateral consequences including not living with friends, living in group facilities and residential relocation appear to differential impact sex offenders.

Despite these seemingly robust results, a few limitations are worth noting. First, the measure of recidivism used Study #1 and Study #2 was an official measure and focused exclusively on re-arrest data. Future research is encouraged to examine whether the results from this study can be replicated using self-report data and other official measures. Having said this, these findings are consistent with the results from a recent longitudinal study utilizing reconviction as the recidivism measure (Tewksbury & Jennings, 2010). Second, the data are from only one state, and there is variation across states in how SORN is applied where some states have implemented a "blanket" application whereas others apply different requirements depending on risk classification. Third, the extent to which these results would generalize to other types of sex offenders such as exhibitionists, voyeurs, and child pornographers has yet to be addressed and is subject to further research. Fourth, although Study #1 incorporated a wide range of variables from a number or risk-related domains, there is certainly the possibility that additional recidivism-relevant variables that were not available for use in this study may be an important addition to research in the future on sex offender recidivism such as how probation and parole may have changed in certain jurisdictions prior to and following the implementation

of SORN. Fifth, future studies should also make an effort to account for "lock-up" time or "street time" when examining sex offender recidivism over time. For offenders who are arrested (for any offense) they will likely spend at least some time incarcerated, and hence have their opportunities to re-offend reduced (for at least the time they are incarcerated). Finally, although Study #2 incorporated a number of relevant collateral consequences that are experienced by sex offender and non-sex offender parolees including post-release employment, post-release homelessness, post-release housing (owner-occupied, renter-occupied), living arrangements (lives alone, lives with family, lives with friends, lives in group facility), and residential relocations (e.g., moves post-release), this is not an exhaustive list. Future research is encouraged to examine other collateral consequences – such as physical assault or other form s of victimization, loss of relationships, and harassment — that may or may not be differentially experienced by sex offenders and non-sex offender parolees.

In the end, the results from Study #1 and Study #2 add to the growing body of literature questioning the universal application of registration and notification procedures (Sandler, et al., 2008; Schram & Milloy, 1995; Tewksbury & Jennings, 2010; Vasquez, et al., 2008; Zimring et al., 2007, 2009; Zgoba, et al., 2008, 2010). Specifically, these findings suggest that SORN is not likely an effective deterrent for sex offender recidivism (which by itself is not a highly likely occurrence) and may produce an environment with specific collateral consequences that inhibit reintegration efforts post-prison release for sex offenders. Nevertheless, despite their common conclusions questioning the value and validity of SORN, such studies have yet to convince policymakers that SORN is a practice that is minimally effective, exceptionally costly, and is a potentially harmful public policy (see Sample & Kadleck, 2008). Interestingly, however, some studies suggest that the public does not believe sex offender registration and community

notification is effective in reducing sex offender recidivism either (Schiavone & Jeglic, 2009; however, also see Levenson, Brannon, Fortney & Baker, 2007). Ultimately, it is important to understand that there is a considerable degree of methodological complexity involved in any effort made to estimate the effect of SORN on recidivism trends, which does not necessarily apply to assessments of other concurrent societal changes or policy measures. As such, researchers and policymakers should proceed with caution, and recognize that evidence largely discounts efficacy, when evaluating how recidivism trends are/are not attributable to SORN.

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DISSEMINATION OF RESEARCH FINDINGS

Publications

Tewksbury, Richard, Wesley G. Jennings and Kristen M. Zgoba. In press. A longitudinal examination of sex offender recidivism prior to and following the implementation of SORN. *Behavioral Sciences and the Law*.

Presentations

Zgoba, Kristen M., Richard Tewksbury and Wesley G. Jennings. A Longitudinal Examination of Sex Offender Recidivism Prior to and Following the Implementation of SORN. Paper presented at annual meetings of the American Society of Criminology, November 16-19, Washington, D.C..

Richard Tewksury, Wesley G. Jennings and Kristen M. Zgoba. A Longitudinal Examination of Sex Offender Recidivism Prior to and Following the Implementation of SORN. Paper presented at the annual meetings of the Association for the Treatment of Sexual Abuse, November 2-5, Toronto, Canada.

Appendix A: Data Collection Tool (Study #1)

Today's Date	//
Offender # (SBI)	Offender Name

PART I – OFFENDER CHARACTERISTICS/DEMOGRAPHICS

DOB	/ (month/day/year)						
Ethnicity/Race	White	Black/African American	Latino Asian Other (please indicate)				
Place of Birth	State		Country				
Offender raised in 2 Parent Home (up to age 13)	Yes	No	Other:				
Living Arrangement Prior to Age 13	Mother Only	Both Parents	Grandparents	Other Relatives	Other:	Not Listed	
Number of Offender's Live-in Siblings Prior to Age 13 (inc. step- siblings)					,		
Last Known Residence	Street Address		City	State	Zip Code	County	

Reported Childhood Abuse (Check all that apply)	None	Sexual	Physical	Emotional	Other:	
Did Offender Have Family Members Involved in CJS? (Check all that apply)	None	Mother	Father	Sibling	Child	Step-parent
	Other	1		Unknown		
Highest Level of Education Completed Prior to Prison	≤ 8 th Grade	Some High School	GED	Some College	High School Degree	2 Year College Degree
	4 Year College Degree	Graduate Degree	Prof Degree (e.g	. JD, MD, PhD)		
Did Offender Earn a Degree in Prison (e.g. GED)	Yes	No				
Marital Status at Index Offense	Never Married	Married	Divorced	Widowed	Separated	
Number of Offender's Children/Stepchildren at time of Offense						
Was Offender Living with Anyone at time of Index Offense?	Yes	No				

If Yes, Whom Did Offender Live With? (specify)								
Did Offender Live w/ Children?	Yes	No	If Yes, # of Children Offender was Living With					
Was Offender Employed Prior to Incarceration	Yes	No						
	If Yes, Numbe	r of Years Emplo	pyed					
	If Yes, Type of	f Employment	White Collar/Prof	Blue Collar/Skilled Trade	Service Industry	Other		
	If Yes, List Pri	or Jobs/Positions	3	1		I		
If Never Employed, Reason for Unemployment (e.g. disability, etc.)	(Please Indicat	e)						
Offender's Income Prior to Incarceration	<20K	20-30K	30-40K	40-50K	50K or Higher	Unknown		
Does Offender Have a History of Mental Health Problems Prior to Index Offense	Yes	No	If Yes, Nature of	Problem (incl. Diag	gnosis if Known)	1		

Does Offender Have a History of Mental Health Tx Prior to Index Offense	Yes	No			
If Yes, Nature of Mental Health Tx	Unknown	Individual	Group	Family	Other (Please specify)
Does Offender Have a History of Drug and/or Alcohol Abuse	Yes	No	If Yes, Nature of A	Abuse	

PART II OFFENDER INCARCERATION DEMOGRAPHICS

Parole or Max Out	Parole	Max Out	
Conditions of Release	Lifetime supervision	Registration	Other (please indicate)
Release Facility			
Sentence Length			
Amount of Time Served			
Number of Disciplinary Infractions while Incarcerated			

PART III – INTERVENTIONS DURING INCARCERATION

PARI III - INTER		1			
Was the offender	Yes	No	If Yes, Type of Er	nployment	
employed inside the					
facility					
•					
Did Sex Offender	Yes	No			
Receive/Participate in					
Tx During					
Incarceration					
If Yes, Tx Level	I	П	III	IV	V
Completed (ADTC					
only)					
• /					
Did Offender	Yes	No			
Receive/Participate in					
Additional Types of					
Tx					
If Yes, Nature of Tx	Psychological	Educational	Life Skills	Drug & Alcohol	Other
D'IOGG I D	37	NT.	D		
Did Offender Deny	Yes	No	Partial Denial (ple	ase explain)	
Involvement in Sexual					
Offenses					

PART IV – INDEX OFFENSE

Index Offense / Arrest Date	/ (month/day/year)
Date of Admission	/(month/day/year)

Age at Admission								
Cohort (Admission Yr)								
Date of Release	//	(month/day	y/year	·)				
Age at Release								
Cohort (Release Yr)								
Type of Instant Sexual Offense	Child Molestation	Incest		Rape		Exhibitionism	m	Voyeurism
Gender(s) of Victim(s)	Male	Female		Both				
Number of Victim(s)	Total	Number of 1	Femal	e Victims	Num	ber of Male Vi	ictim	S
Age(s) of Victim(s)								
Relationship of Offender to Victim	Stranger	Family	Acq	uaintance	Signi	ficant Other	Oth	ner (Please specify)
Did Offender Live with Victim at time of Index Offense	Yes	No	If Y	es, Total # o	of Victi	ms Offender W	Vas L	iving With
Were Drugs Involved	Yes	No						

Was Alcohol Involved	Yes	No		
Did Offender Use a	Yes	No		
Weapon				
If Yes, Type of Weapon Used	Gun	Knife	Rope/Tape/ Bondage	Other (please explain)
Location of Offense	(Please specify)			

PART V – PRIOR NON SEXUAL OFFENSES (Prior to Instant Offense)

Number of Prior Non- sex Arrests Number of Prior Non-			25 (1101 to 1115)	,		
sex Convictions						
Number of Prior Non-						
sex Incarcerations						
Age at First Non-		N/A				
Sexual Offense/Arrest						
(if applicable)						
Types of Previous	Violent	#	Property	#	Drug	#
Offenses						
	Weapon	#	Auto Theft	#	Disorderly	#
					Conduct	

#

Was the Offender Ever Charged As a Juvenile	Yes	No			1		
PART VI – PRIOR S	EXUAL OF	FENSES (Prior	to Instant Offens	se)			
Number of Prior Sex Arrests							
Number of Prior Sex Convictions							
Number of Prior Sex Incarcerations							
Age at First <u>Sexual</u> Offense/Arrest (if applicable)		N/A					
Gender(s) of Victim(s)	Male	Female	Both				
Number of Victim(s)	Total	Number of Fo	nber of Female Victims Number of Male Victims				
Age(s) of Victim(s)							
Victim-Offender Relationship	Stranger	Family	Acquaintance	Significant Other	Other (please specify)		

Other (specify)

Nature of Previous	Sexual Assault	t Against Adult	Molestation of a Minor Child	Voyeurism	Exhibitionism
Sexual Offenses (check					
all that apply)					
	G 7.1				
	Computer Rela	ated Sex Crime	Other		
Total Number of					
Previous Contact					
Victims					
	**	1 > 7	***		
Was the Offender	Yes	No	Unknown		
Ever Charged as a					
Juvenile					

PART VII - MEGAN'S LAW NOTIFICATION & REGISTRATION

Level of Megan's Law	Tier 1	Tier 2	Tier 3	Unknown
Notification				
Offender's Score on		Unknown		
Registrant Risk				
Assessment Scale				
Did Offender Comply	Yes	No	Unknown	
w/Re-registration				
After Release				

PART VIII – RE-OFFENSES & INCARCERATIONS (Sexual and Non-Sexual)

Did Offender Recidivate	Yes	No					
If Yes, Type of Recidivism	Sexual	Non-Sexual	Both				
Type of <u>Sexual</u> Re- Offense (if applicable)	Child Molestation	Incest	Rape	Exhibitionism	Voyeuri	sm	
	Gender(s) of Victim(s)	Male	Female	Both	1		
	Total Number	of Victim(s)	1	# of Female Victi	ms	# of Male	e Victims
	Age(s) of Victi	m(s)		·			
Type of <u>Non-Sexual</u> Re-offense (if applicable)	Violent	#	Property	#	Drug		#
	Weapon	#	Auto Theft	#	Disorder	•	#
	Other (specify)			1	- L		#
Was the Recidivist Act Considered Violent	Yes	No				,	
Number of Re-Arrests							

1 st Re-Arrest Date	/ (month/day/year)					
Type of Offense	(Please specify)					
1st Re-Conviction Date	/ (month/day/year)					
1 st Re-Incarceration Date	/(month/day/year)					
Did Offender Commit Numerous Types of Re-Offenses	Yes	No				
Is the Case Still Pending	Yes	No				

Appendix B: Data Collection Tool (Study #2)

Today's Date	/						
Offender # (SBI)		Offen	nder Name				
PART I – OFFENDER CHARACTERISTICS /DEMOGRAPHICS DOB	/(month/day/year)						
Ethnicity/Race	White	Black/African American	Latino	Asian	Other (please indicate)		
PART II – INDEX OFFENSE							
Index Offense / Arrest Date	/ / (month/day/year)						
Date of Admission	/ (month/day/year)						
Age at Admission							
Date of Release	/ / (month/day/year)						
Age at Release							
Cohort (Release Yr)							

PART III – RE-OFFENSES & RE-INCARCERATIONS (IF APPLICABLE)

Did Offender	Yes	No
Recidivate		
Number of Re-Arrests		
1st Re-Arrest Date	//	(month/day/year)
2 nd Re-Arrest Date ⁴	//	(month/day/year)

PART IV- COLLATERAL CONSEQUENCES POST-RELEASE

Employment (Post-	Yes	No	Unknown		
release)					
Homelessness (Post-	Yes	No	Unknown		
release)					
Living Arrangements	Owner Occupied	Renter	Transient	Unknown	
(Post-release)	Owner Occupied	Occupied	Tansient	Chkhown	
(1 ost-release)		Gecupica			
Who is the offender	Self	Family	Friends	Group facility	Other
living with?					
			** 4		
Residential	Yes	No	Unknown		
Relocations (moves)					
(Post-release)					

⁴ Add more rows for each re-offense and include the "re-arrest date," the "type of the offense," the "re-conviction date," the "re-incarceration date," whether or not the "offender committed numerous offenses," and whether or not "the case is still pending."