UC Riverside

UC Riverside Electronic Theses and Dissertations

Title

A Spatial Examination of Residency Restriction Legislation: The Impact on Social Disorganization & Service Providers

Permalink

https://escholarship.org/uc/item/3jt7x7zn

Author

Wolbeck, Erin

Publication Date

2014

Peer reviewed|Thesis/dissertation

eScholarship.org Powered by the California Digital Library
University of California

UNIVERSITY OF CALIFORNIA
RIVERSIDE

A Spatial Examination of Residency Restriction Legislation: The Impact on Social Disorganization & Service Providers

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Sociology

by

Erin Patricia Wolbeck

June 2014

Dissertation Committee:
Dr. Robert Nash Parker, Chairperson
Dr. Tanya Nieri
Dr. David Swanson

Copyright by
Erin Patricia Wolbeck
2014

The Dissertation of Erin Patricia Wolbeck is approved:

_____

_____

_____

Committee Chairperson

University of California, Riverside

Acknowledgements

I would first like to thank my adviser, Dr. Robert Nash Parker, for his support, friendship, and encouragement throughout my graduate school career. He has had a profound influence on my success in the Sociology program and as a scholar. His knowledge and expertise in GIS made the completion of this research possible and his patience as I navigated through the spatial nature of this project did not go unnoticed. I would also like to thank Dr. Tanya Nieri for serving on my dissertation committee and for always being a source of encouragement and positivity. She has always been available to answer any and all questions I have had regarding research, teaching, and beyond. In addition, I would like to thank Dr. David Swanson for serving on my dissertation committee and for sharing his invaluable experience as a demographer which greatly aided in the development and completion of the dataset for this research. He has also been an invaluable source of encouragement as I have completed this project. I would also like to thank Dr. Kirk Williams and the late Dr. Austin Turk for their service on my prospectus committee and their thoughtful comments on the direction of this research. I would also like to acknowledge and thank Anna Wire for her patience and knowledge. She has always been there for my administrative/department related questions which were at times quite obscure.

To my graduate student cohort, you have undoubtedly provided the vital emotional support needed to complete a graduate studies program. In particular I would like to thank Anthony Roberts for constantly reassuring me that my

research had value and for being one of my biggest cheerleaders. I would also like to thank Caryn Gerstenberger for always being there to listen whether it be rants, raves, commiserations, complaints, etc. I have made life-long friends in this program and for that I am profoundly grateful.

And last but not least I would like to thank my family. First and foremost my husband and children for putting up with a partially absent wife and mother as I completed this stage in my life. Thanks to my husband, Brad, for always supporting my choices and making sacrifices in his life so that I could achieve my own goals. Thanks to my children Hailey and Jackson who constantly remind me of the true meaning of life and inspire me to be the best person that I can be. I would also like to thank my parents for supporting me throughout my life and for being amazing babysitters while I couldn't be there to hold down the fort. I would also like to thank my sister, Sarah, for motivating me to continue in my education, she has been and always will be, a true inspiration to me in both my personal and professional life.

ABSTRACT OF THE DISSERTATION

A Spatial Examination of Residency Restriction Legislation: The Impact on Social Disorganization & Service Providers

by

Erin Patricia Wolbeck

Doctor of Philosophy, Graduate Program in Sociology
University of California, Riverside, June 2014
Dr. Robert Nash Parker, Chairperson

This study seeks to determine if the neighborhoods more available for sex offenders to legally reside can be characterized as more economically distressed and socially unstable than the neighborhoods that are less available for such offenders to legally reside. A secondary aim id to examine the relationship between census tract availability and the number of service providers located within census tracts to determine if more available census tracts contain fewer service providers than less available census tracts. Results indicate mixed results in terms of the relationship between neighborhood availability, economic distress, and community stability and these results vary across counties and estimation methods. The results suggest that residency restriction legislation can have divergent consequences. It may be the case in some jurisdictions that those areas characterized as more available to sex offenders may actually be more organized, but this does not mean that this is necessarily where offenders are living. The intent of this study is to examine the effects of residency restriction legislation in and of

itself, not the effects of informal community processes seeking to rid communities of registered sex offenders. These findings suggest that the legislation itself may not be the cause of the residential patterns amongst registered sex offenders reported in previous research. Socially disorganized densely populated areas are those most likely to have a greater number of schools and parks and thus a greater amount of restricted area. Thus, if sex offenders were to abide by residency restriction legislation they may actually find themselves residing in more organized areas, with more legal availability yet perhaps less practical availability.

TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION
Introduction 1
Study Organization 3

CHAPTER 2
OVERVIEW OF SEX OFFENDER LEGISLATION
Introduction 4
Evolution of Sex Offender Legislation 4
Stranger Danger, Recidivism, & Treatment: Myths Perpetuating Sex Offender Legislation 6
Mandatory Sentencing Laws & Civil Commitment 10
Community Notification & Registration 11
Residency Restrictions 17
Social Impact of Sex Offender Legislation 20

CHAPTER 3
BACKGROUND, SIGNIFICANCE, & THEORY
Introduction 23
Residency Restriction Legislation & Its Efficacy 23
Residency Restrictions & Recidivism 25
Residency Restrictions & Neighborhood Context 27
Residential Patterns of Registered Sex Offenders 28
Recidivism, Reintegration, & Neighborhood Context 30
Social Services & Recidivism 32
Theoretical Framework 34
Social Disorganization 35
Mechanisms of Social Disorganization 35
Integrating Routine Activities Theory 38
Social Disorganization & Offender Re-entry 39
The Present Study 42

CHAPTER 4
METHODS
Introduction 45
Research Questions 45
Research Design 46
Sample 46
Data & Measurement of Independent Variable 47
Data & Measurement of Dependent Variable 50
Census Tract Social Disorganization 50
Social Services 54

Analysis 56
Social Disorganization 56
Social Service Providers 58

CHAPTER 5
RESULTS
County Level Descriptive Statistics 59
Categorical Descriptive Statistics 67
Regression Results 72
Orange County 73
Riverside County 76
San Bernardino County 78
Regression Results Summary 80
Service Provider Descriptive Statistics 82
Orange County 82
Riverside County 83
San Bernardino County 84
Results Summary 85

CHAPTER 6
DISCUSSION & CONCLUSION
Discussion 87
Social Disorganization 87
Between County Variation 88
Estimation Method Variation 90
Service Providers 91
Conclusion & Policy Applications 91
Limitations & Suggestions for Future Research 93

REFERENCES 94

LIST OF TABLES

Table 1 - School and Park Address Geocoding Data 49

Table 2 - Service Provider Address Geocoding Data 55

Table 3 - Descriptive Statistics 60

Table 4 - Orange County Descriptive Statistics by Level of Census Tract Restriction 66

Table 5 - Riverside County Descriptive Statistics by Level of Census Tract Restriction 66

Table 6 - San Bernardino County Description Statistics by Level of Census Tract Restriction 66

Table 7 - Orange County Social Disorganization Characteristics OLS Regression and Spatial Model Results 72

Table 8 - Riverside County Social Disorganization Characteristics OLS Regression and Spatial Model Results 75

Table 9 - San Bernardino County Social Disorganization Characteristics OLS Regression and Spatial Model Results 78

Table 10 - Orange County Service Providers Descriptive Statistics 83

Table 11 - Riverside County Service Providers Descriptive Statistics 84

Table 12 – San Bernardino County Service Providers Descriptive Statistics 85

CHAPTER 1

INTRODUCTION

Introduction

This study combines two bodies of criminal justice scholarship that have heretofore remained relatively segregated. The first body of scholarship focuses on the efficacy and unintended consequences of residency restriction policies for sex offenders while the second body of scholarship focuses on general issues surrounding prisoner re-entry, reintegration, and recidivism. Given that most sex offenders who recidivate commit parole violations rather than new sex crimes (California Department of Corrections & Rehabilitation, 2010), it is important to examine all forms of recidivism (sex crimes, non-sex crimes, and parole violations) as well as the community characteristics that may influence them. The latter are important because increased levels of incarceration coupled with "get-tough" legislation and policies have increased the number of people involved in the justice system. Therefore, it is critical to understand how neighborhood context affects the reintegration and recidivism of offenders given that most of them will eventually return to society (Hipp, Petersilia, & Tuner, 2010). Indeed, many states in the U.S. are beginning to reduce their prison populations, causing an influx of offenders reentering society. This trend gives further weight to the importance of understanding how and to what extent behaviors are shaped by the community surrounding ex-convicts after release (Kubrin & Stewart, 2006).

In response to these issues, this study extends contemporary research (e.g., Kubrin & Stewart, 2006; Mears et al., 2008; and Hipp, Petersilia, & Turner 2010) on the social

contexts that may facilitate the successful reintegration of offenders and/or may increase the risk for recidivism. A commonality among the studies cited above is their assertion that individual attributes of offenders explain recidivism only in part; the other crucial component is the community context to which offenders return (Tillyer & Vose, 2011) which is examined in this research.

This study draws upon the tenets of social disorganization theory and routine activities theory hypothesizing that residency restrictions aimed at sex offenders may force them to reside in socially disorganized areas which may have the implication of increased levels of recidivism via the mechanisms outlined above. Not only are socially disorganized areas likely to increase recidivism due to the mechanisms outlined in social disorganization theory, but they may be unable to address many of the social and health needs of re-entering offenders in terms of employment opportunities, treatment programs, health care, and counseling (Hipp et al., 2010). Furthermore, if indeed registered sex offenders do recidivate, they do so in the most disadvantaged neighborhoods as these are the locations where motivated offenders, suitable targets and the lack of capable guardians are most likely to converge. The potential implications of this effect loom large given the research suggesting that the least disorganized neighborhoods are also the least able to provide effective levels of social control and collective efficacy which may increase the possibility of recidivism by such offenders. Thus, there may be a negative overall net effect on public safety as a result of residency restriction policies.

Study Organization

The rest of this dissertation outlines the relevant background, previous research, theory, methods, results, and conclusions of this study. Chapter 2 provides an overview of sex offender legislation including a discussion of the evolution, types, and perpetuation of such legislation and its social impact. Chapter 3 provides a review of prior research, discussing the research background, significance, and theoretical perspective of the study discussing the social disorganization framework, and detailing the contributions of the present study. Chapter 4 presents the methods used to conduct this study including the research questions posed, research design, and analytic techniques utilized. Chapter 5 presents the findings and results. Finally, Chapter 6 discusses the aforementioned findings outlining policy applications and limitations and suggestions for future research.

CHAPTER 2

OVERVIEW OF SEX OFFENDER LEGISLATION

Introduction

Law enforcement agencies actively seek effective tools to track, locate, and ultimately prevent sex offenders from re-offending amid seemingly constant clamor and pressure to protect the community's children from such predators (Clontz & Mericle, 2002). The recent rise in sex offender legislation, policies, and practices can be thought of as reflective of the penal philosophy that is increasingly focused on managing or controlling high-risk categories of offenders rather than transforming or rehabilitating individual offenders (Farkas & Stichman, 2002). Numerous get-tough sex offender policies have proliferated in the past two decades, many of which do not align with what scholars know regarding sex offender etiology, recidivism, and treatment. In the wake of several high profile cases involving sex offenders who recidivated after being released to the community, several pieces of ground-breaking legislation were passed (Levenson & Cotter, 2005). The nature, extent, and type of policies utilized to manage sex offenders and protect communities vary from state to state. However, among the most popular (or numerous) are mandatory sentencing laws, civil commitment, community notification, enhanced monitoring & supervision, and residency restrictions (Cohen & Jeglic, 2007).

Evolution of Sex Offender Legislation

Sex offenders are often viewed as the worst of the worst among criminals. As such, they are subject to strict sentencing, enhanced post-release monitoring, community

notification, public registration, and restrictions on where they may live, work, and/or spend their time (Suresh et al., 2010). The sex offender laws of the last two decades have developed in a piecemeal manner often fueled by public fear and misperceptions. In addition, such laws often lack rigorous empirical insight and testing (Meloy, Miller, & Curtis 2008).

An unprecedented amount of sex offender legislation was enacted in the 1990s. Some of this legislation may have been the result of medical and technological innovations allowing for the creation of DNA databases, widespread chemical castration, and large-scale community notification programs of sex offenders' residences (Sample & Kadleck 2008). Many laws that were enacted during this decade, however, were not new, but rather re-formulations of previously existing civil commitment or sexual psychopath laws (Tewksbury, 2002) seemingly perpetuated by the public's growing concern over sexual predators.

Sample & Kadleck (2008) document how sex offender legislation is shaped by the opinions of the legislators themselves as well as their constituency. In documenting the perpetuation of sex offender legislation, they discuss how public perception can play an important role in policy enactment, namely via media-perpetuated fear. Public fear is often aroused by isolated incidents of crime, resulting in groups of concerned citizens finding their way to the necessary policy makers and demanding reform (Sample & Kadleck, 2008). Sample and Kadleck (2008) conclude: "...sex offender policies appear to be based on personal opinion, public perception, and media coverage of sex offenders and specific crimes, particularly those against children....the degree to which sex

offender's laws have been based on isolated incidents of offending, inaccurate opinions, or faulty perceptions may influence the effectiveness of the legislation. (p. 61)." While sex offender policies enacting registration, notification, residency restrictions, etc. may be well-intended, they are also unlikely to have an effect on social violence and may inadvertently increase victimization (Meloy, Miller, & Curtis, 2008).

Stranger Danger, Recidivism, & Treatment: Myths Perpetuating Sex Offender Legislation

Sex offender legislation is unprecedented with regard to its ability to punish the offender after his or her prescribed punishment has been served (Sample & Bray, 2003). Sex offender legislation, and residency restriction legislation in particular, has been based on a number of myths and assumptions regarding the nature and extent of sexual offenders and offenses. Indeed, the reasons most commonly used to justify the need for residential restrictions either directly contradict the available empirical data or are associated with ambiguous research findings (Meloy, Miller, & Curtis 2008). Accordingly, several myths, propagated by the media (Levenson, 2006), support enhanced sex offender legislation: Myth 1) strangers are dangerous (the concept of "stranger-danger"); Myth 2) all sex offenders re-offend; and Myth 3) sex offender treatment is ineffective. Research does not support these myths and instead, suggests that exclusionary housing policies and other sex offender management policies are counterproductive (Levenson, 2006).

It is a common misperception among the general public that an unknown sexual predator (a stranger to the victim) is the most likely person to victimize a child. Accordingly, there appears to be a temporal order between high-profile "stranger-danger" crimes against children and the creation and enactment of restrictive sex offender legislation (see Meloy, Miller, & Curtis 2008 for a discussion of this phenomenon). In actuality, the data reveal that children, and young children in particular, are most likely to be victimized by someone known to them, such as a family member, acquaintance, or friend (Snyder, 2000). The notion of stranger-danger is undermined by a Bureau of Justice Statistics report (Snyder, 2000) which shows that 93% of child sexual abuse victims knew their abuser, 34.2% of the abusers were family members and 58.7% were acquaintances. A separate report concluded that nearly 40% of sexual assaults take place in the victim's homes, while 20% take place in the home of a friend, relative, or neighbor (Greenfeld, 1997). We also see this victim-offender relationship being replicated by non-child victims as well (e.g., Greenfeld, 1997).

The second myth, that sex offenders are more likely to recidivate than other types of offenders, has been called one of the biggest misconceptions about sex offenders (The Center for Sex Offender Management, 2001). There is a significant body of research to support the notion that on average, sex offenders recidivate less often than other types of serious offenders (see Harris and Hanson, 2004 and Hanson & Bussiere 1998). A review of more than one hundred sex offender recidivism studies found that, due to methodological difficulties including differences in sample size and variability in follow-up lengths, most studies reported inconsistent levels of re-offending among these

offenders. Accordingly, it has been reported that 20-60% of untreated sex offenders re-offend over the five years following release, whereas typically 15% or less of treated offenders repeat their crimes over this same period (Marshall, Eccles, and Barbaree, 1993). Three variables strongly differentiate recidivists from non-recidivists (Hanson & Harris, 2001). People who are more likely to recidivate see themselves as no risk to society, are surrounded by poor social influences, and maintain an acute notion of sexual entitlement. A review of over five dozen recidivism studies involving nearly 24,000 offenders revealed that only 13.4% committed a new sexual offense within four to five years (Hanson & Bussiere, 1998). Furthermore, rapists re-offended twice as often as child molesters. Sample and Bray (2003) found no differences in recidivism between sex offenders and other offenders.

Along with the faulty assumption of the inevitability of sexual recidivism is the notion that offenders cannot be rehabilitated or successfully treated. Yet, several meta-analyses reviewing various sex offender treatment programs have revealed that offenders who successfully complete treatment programs using cognitive behavior modification protocols recidivate less often and less quickly than those who do not undergo such treatment (see Hanson et al., 2002 and Losel & Schmucker, 2005). A study examining the effectiveness of a treatment program in a community setting tracked two hundred sexual offenders for recidivism rates for up to five years (Turner, Bingham, and Andrasik, 2000). Half of the offenders received treatment, and the other half did not. Lower recidivism rates were found among those who completed the treatment versus those who did not. Another study revealed that offenders completing treatment were less

likely to re-offend if they were married and employed, and more likely to re-offend if they had a prior criminal history and prior sexual offense history (Turner et al., 2000).

Additionally, several studies have examined variables that may affect the outcome of offender treatments. Some suggest that a critical window may exist from 12 to 24 months after treatment during which the offender may be at a greater risk for the commission of new sex crimes (Turner et al., 2000). A Vermont study of sex offenders, mostly pedophiles, participating in a cognitive behavioral treatment program while under correctional supervision in the community, found that only 1.5% of offenders who completed the four-year treatment program were arrested for a further sexual offense (McGrath, Hoke, & Vojtisek, 1998). This research demonstrates that sex offender treatment can be achieved in a community setting.

Researchers have also identified certain psychological characteristics that are unique to sex offenders and influence treatment responsiveness. These include extremely low levels of victim empathy, possessing grossly deviant cognitions about their victims, emotional loneliness, and inadequate problem-solving abilities (e.g., Fisher, Beech, & Brown, 1999; and Marshall & Barbaree, 1990). These factors are thought to contribute to and maintain offending behavior. Thus, treatments should address these factors to successfully reduce the risk of recidivism. It has been demonstrated that upon completion of effective treatments, participants feel more in control of their lives, more extraverted, less subjective distress, less hostility, less depression, and improved self-esteem (Hanson et al., 1993). A review of the empirical literature on the prediction of re-offending among sex offenders noted that overall, offenders who followed through with

treatment recidivated less often than those who failed to complete treatment (Hanson, 2000). This research indicates that the elements that are crucial to reducing recidivism and enhancing treatment responsiveness are the same elements may be negatively impacted by restrictive sex offender legislation.

Mandatory Sentencing Laws & Civil Commitment

The harsh sentencing laws applied to sex offenders are intended to provide what politicians as well as the public see as being adequate punishment; yet, they aim to prevent recidivism by confining offenders. Research has indicated that mandatory sentencing laws do not have any deterrent value or effects on incarceration (Sorenson & Stemen, 2002; Worrall, 2004). Furthermore, no investigation into how these laws specifically impact on sex offenders has been done. It is likely that long incarceration sentences may be most advantageous when paired with other forms of prevention like treatment.

Civil commitment laws (also known as sexually violent predator laws) involve civilly committing sex offenders following the termination of their criminal sentence. This method of incapacitating sex offenders has gained popularity. Although originally intended for mentally ill offenders, civil commitment is now being used to keep offenders off the streets after their maximum sentences have expired (Levenson, 2003; Farkas & Stichman, 2002). The use of civil commitment for sex offenders may be a direct result of offenders expressing an interest to re-offend followed by the commission of new crimes upon release (Cohen & Jeglic, 2007). Thus, such laws aim to protect the public from sex

offender recidivism. The initial intent of civil commitment was to treat sex offenders so that they would not recidivate; yet, the guidelines can be framed so as to confine offenders with no further intervention(s) (Levenson, 2003). The problem becomes one of risk-assessment. If offenders are locked up indefinitely, there is no way of knowing if a person would have recidivated or not. The one study that has examined civil commitment found only 28% of the released offenders recidivated, indicating that nearly 70% of those committed would not have re-offended if released (Cohen & Jeglic, 2007).

Community Notification and Registration

Community notification and registration laws are among the most popular, with every state currently utilizing some form of these policies. Notification entails making residents aware of the fact that a released offender will be/is residing in their community whereas registration entails compelling sex offenders to submit their personal information (inclusive of offense(s), residence location, aliases, etc.) to a publicly available law enforcement database. Two key pieces of legislation pertaining to sex offender community notification and registrations are the *Jacob Wetterling Crimes Against Children Act* and *Megan's Law*. In 1994 the *Jacob Wetterling Crimes Against Children Act* was passed mandating that no less than 10% of a state's funding under the federally funded Edward Bryne Memorial State and Local Law Enforcement Assistance grant program be used for the management of state-wide systems to register and track convicted sex offenders. The *Jacob Wetterling Act* also encouraged states to collect DNA samples from these offenders to be stored in a database.

Megan's law was passed in 1996 as an amendment to the Wetterling Act, mandating that states develop protocols which would allow the public access to information about previously convicted sex offenders living in their community (Clontz & Mericle, 2002). To date, all fifty states have expanded their registries, notifications, and DNA laws to include persons convicted of both violent and nonviolent sex crimes against any person regardless of their age (Sample & Bray, 2003). The range of offenses that requires offenders to register is broad, ranging in California from indecent exposure to rape.[1] Most states that utilize community notification in the name of public safety operate under a three-tiered system that determines how much proactive notification will occur based on the dangerousness of the offender (Farkas & Stichman, 2002). Less dangerous offenders may only be subject to their information being included in a publicly available database, whereas people deemed the most dangerous may warrant postal mailers or door-to-door notification by law enforcement of the individual's intended residence. In 2007 the *Sex Offenders Registration and Notification Act* (SORNA) which is Title I of the *Adam Walsh Child Protection and Safety Act* was signed into law and outlined minimum standards for sex offender registration and notification in the United States and the creation of a national sex offender registry (National Criminal Justice Association, 2013). The aforementioned act requires sex offenders to provide more extensive registration information and expands the amount of information available to the public.

[1] See http://www.meganslaw.ca.gov/registration/offenses.aspx?lang=ENGLISH

The rationale behind both of these tracking methods (registration and notification) is to protect children against assaults by strangers (Cohen & Jeglic, 2007); however, the majority of sexual assaults (7 out of 10) are committed by acquaintances of people known to the victims (Catalano, 2005). With regard to children, they are much more likely to be abused by someone they know (Freeman-Longo, 1996). Thus, such legislation does little to protect a majority of victims. Additionally, empirical research has suggested that sex offender registration policies have little, if any, effect on preventing offenders from recidivating (see Cohen & Jeglic, 2007). In one of the few studies comparing the recidivism rates of registered versus unregistered sex offenders, no statistical difference was found in the recidivism rates between the two categories of offenders (Schram & Milloy, 1995). Additionally, registered sex offenders who recidivated did so more quickly than non-registered offenders. In terms of notification, simply knowing where a sex offender is will not necessarily make that offender more or less dangerous.

Registration and notification laws have not been found to have no demonstrable effect on reducing the recidivism of sex offenders. As discussed previously, Schram and Milloy (1995) found that there were no statistically significant differences between the arrests rates for sex offenses of the offenders subject to notification versus a comparison group of sex offenders who were not. Only two of seven studies reviewed by Socia and Stamatel (2010) found that offenders subject to community notification committed fewer crimes while in the community, though causality could not be determined. There was no way of determining whether this effect was indeed due to the notification in and of itself.

A broader issue with registration laws is the ability to maintain current and accurate information about offenders. According to the National Criminal Justice Association (2013) there are more than 700,000 registered sex offenders residing in communities throughout the United States. Accordingly, the Center for Sex Offender Management (1999) reports that maintaining accurate information on sex offenders is a difficult task. In 1996, some states reported that 45% of all sex offenders had inaccurate or missing registration information. Furthermore, the Connecticut State Police reported that 50% of their registration information was either incomplete or inaccurate. Castro (2003) reported that in California 44% of the state's registered offenders cannot be accounted for by authorities. Unless every sex offender complies with registration obligations and authorities ensure compliance, there is no way to ensure the accuracy of these databases.

In addition to providing little demonstrable protective effect, notification laws have been criticized for encouraging vigilantism, disregarding civil rights, and driving offenders underground (West, 2000). Tewksbury (2005) argues that community notification and registration efforts are associated with a high probability of collateral consequences. He holds that when residents learn that a sex offender lives in their neighborhood, they may become fearful and harass, victimize, or discriminate against the offender. Consequently, the offender may become increasingly isolated and frustrated, possibly leading to increased recidivism. Zevitz and Farkas (2000) summarize the impact of sex offender notification and registration laws on offenders:

> On the one hand, public notification empowers community members to protect themselves and their children from a sex offender living next door. On the other hand, public notification invades the privacy of an offender who has 'served his sentence' and paid his debt to society. Notification may have anti-therapeutic consequences for the social and psychological adjustment of sex offenders. It may have an adverse impact on treatment for those who might otherwise respond favorably. Notification also disrupts the stability of residence and employment as well as the support network necessary for successful reintegration. Family and other personal relationships are strained and irreparably damaged in many cases. Furthermore, negative reactions to the notification process and excessive media coverage for the release of a sex offender can result in further stigmatizing, ostracizing, and even harassment (p. 376).

Despite these shortcomings, registration and notification laws continue to be enhanced. In November of 2012, California Proposition 35 -- also known as the *Californians Against Sexual Exploitation Act* -- was passed overwhelmingly. The provisions of this initiative include increased prison terms for human traffickers and sex offender registration requirements for convicted sex traffickers. The most controversial point of this legislation, however, was the requirement that all registered sex offenders must disclose their e-mail addresses, internet providers, and social-networking/screen names on sex offender registration forms. This law exemplifies the increasing mandates society places on sex offenders. At the time of this writing, an injunction remains in

effect, preventing law enforcement agencies from collecting this information until a lawsuit initiated by the American Civil Liberties Union (ACLU) is settled. The lawsuit argues that the provisions restrict the free speech and free associations rights of registered sex offenders online.

Another recent modification of sex offender registration law was the requirement beginning in 2013 that the Department of Justice post static risk assessment scores for sex offender registrants who are eligible to be scored. This modification has been an attempt to make the registration information more useful, as it allows the public to more readily assess the "danger" or "threat" of these offenders, rather than simply knowing where/who they are.

Sex offender registration in California (the area of interest in this study) is governed by California Penal Code Section 290, which requires offenders convicted of certain sexual offenses to register with the appropriate local law enforcement agency responsible for the area in which the offenders live. Current laws mandate life-long registration for 121 different crimes including rape, assault to commit rape, lewd and lascivious behavior with a child under 16, statutory rape, and possession of child pornography. Juveniles are required to register as sex offenders upon their release from the California Youth Authority for certain sexual offences including rape, continuous sexual abuse of a child, and abduction of a minor for prostitution. However, it is possible for an offender to obtain a Certificate of Rehabilitation ten years after release from custody or a Governor's Pardon relieving him or her of the life-long registration requirement; yet this option does not apply to all offenses equally.

Residency Restrictions

In documenting the history of residency restriction legislation, Meloy, Miller, and Curits (2008) state that Delaware and Florida were the first two states to enact state-level legislation restricting sex offender's residential locations in 1995. Today, all states have some form of sex offender residency restriction law in place or have local ordinances with the same intent and purposes. Residential restriction laws limit the locations where registered sex offenders can live. In some jurisdictions these laws also limit where such offenders can work, walk, or even be physically present (Meloy, Miller, & Curtis 2008). The general formula for residency restrictions is that sex offenders are prohibited from living within a certain distance of a list of locations where children are likely to congregate (schools, parks, daycare center, bus stops, playgrounds, etc.).

In some states such restrictions apply to all offenders convicted of a sex crime, while in others they are limited to more serious or high-risk offenders (Hughes & Burchfield, 2008). The locations around which sex offenders are prohibited from living as well as the prohibitive distance(s) vary from jurisdiction to jurisdiction. Typically such distances range from 500 to 2,500 feet and typically include schools, parks, and daycare facilities (Hughes & Burchfield, 2008). *Jessica's Law* (also known as the Jessica Lunsford Act) was originally passed in Florida in 2005. Versions of this act have been proposed in several states, including California where it was passed overwhelmingly in 2006 as Proposition 83.

This state-level residential restriction legislation in California is the subject of this research. As noted above, California's residential restriction legislation was enacted in 2006. Proposition 83 made approximately 400 changes to California statutes addressing such offender management issues as sentencing, conditions/methods of release, and supervision in the community. Some of the key provisions of Proposition 83 include electronic monitoring of sex offenders, mandatory minimum sentences, and the creation of "predator-free" zones (www.83yes.com, 2006). The scope of the "predator-free" zones as stated in the legislation prohibits registered sex offender from living with 2,000 feet of schools or parks and applies to both juvenile and adult offenders and to incidents involving either juvenile or adult victims. These characteristics of the legislation place it among the broadest laws in terms of the population to which it is applied (i.e., all registered sex offenders regardless of age) and the amount of area it restricts, and at the same time among some of the narrowest laws in terms of the number of child congregation locations (listing only schools and parks as mandatory locations). Other state legislation varies in terms of to whom the statute applies, the area of the restricted zones (typically ranging from 500 to 2,000 feet), and the amount of child congregation locations listed in the statute (with some states listing up to nine specific locations). California Proposition 83 currently applies only to registered sex offenders who are on probation or parole. It is the focus of this study. California's legislation, like that of many other states, is open-ended, allowing local jurisdictions to expand the list of restricted child congregation locations as they see fit and thus, allowing localities to broaden the scope of the legislation.

It has also become increasingly popular to couple geographic positioning system (GPS) monitoring with residence restrictions. The rationale for such monitoring is that law enforcement will know if an offender is in a location(s) that they may have been prohibited from frequenting. That is, we are able to know the location of offenders and ban them from being in certain areas. Note, however that knowing where offenders are does not necessarily mean that we know what they are doing (Cohen & Jeglic, 2007). An offender may re-offend at his residence or a friends' house, locations from which he is not prohibited. As such, coupling monitoring with intense supervision may prove to be most effective. Indeed, in some studies offenders have reported that they are likely to seek out victims either in their own home or at places far away from their local neighborhoods (Hughes & Burchfield, 2008).

Residency restriction laws reflect concepts of the routine activities theory of crime. Such laws assume that sex offenders are situationally motivated; thus, if they are prohibited from living within a certain distance of potential victims, they will be less likely to re-offend (Hughes and Burchfield, 2008). Research on residency restriction laws and other sex offender legislation has been two-fold.[2] On the one hand, studies have examined the effectiveness of such policies in preventing recidivism. On the other hand, other studies have examined the policies' impact on the quality of life of offenders. Other research has shown that offenders themselves believe such policies to be ineffective. An exploratory survey of over one hundred sex offenders in Florida found

[2] See Chapter 3 for a more detailed discussion of residency restriction legislation research

that most respondents indicated that housing restrictions led to increased isolation, decreased stability, and greater financial and emotional stress (Levenson & Cotter, 2005). It also revealed that the offenders did not perceive residency restrictions to be helpful with regard to risk management, suggesting that such restrictions unintentionally increase the triggers causing one to re-offend. Additionally, residency restriction legislation remains a challenge for law enforcement officials to enforce. In many cases registered offenders may be forced to live in violation of such policies because they cannot afford to live in accordance with them (Suresh et al., 2010).

Social Impact of Sex Offenders Legislation

The foregoing review illustrates the significant amount of literature on the implications of sex offender legislation for offenders' quality of life and risk of recidivism. Recently, scholars have begun to examine the implications for the members of the communities in which sex offenders are placed. On the one hand, legislation such as notification laws have the potential to negatively affect community members by increasing fear, decreasing trust, etc. (Tewksbury, 2005); while on the other hand, an issue of disproportionality arises in terms of where offenders live. That is, because of residency restrictions, offenders are often forced to live in poor and marginalized neighborhoods. In turn, these disadvantaged communities have to deal with notifications and a disproportionate number of offenders living in their neighborhoods. Accordingly, some scholars have explored the possibility that community notification laws send a message to potential victims in "disadvantaged areas, which are usually disproportionately populated by racial and ethnic minorities (that they are) less valued

than those in more affluent communities, who are disproportionately white" (Hughes & Kadleck, 2008, p. 488) that lawmakers are unconcerned about their potential victimization.

Researchers examining sex offending and policy responses to it have begun to draw insight from environmental justice perspectives. Accordingly, there is a sparse amount of literature examining sex offender residency restriction legislation through an environmental justice perspective (see Hughes and Burchfield, 2008). The United States Environmental Protection Agency defines environmental justice as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulation, and policies" (Hughes and Burchfield, 2008 p. 653). The environmental justice perspective was originally conceptualized as encompassing a broad range of issues pertaining to community stability and quality of life. One of the focuses of this perspective is the intersection of socioeconomic inequalities with environmental policies that have the outcome of producing negative consequences, particularly for poor people of color (see Hughes and Burchfield, 2008 and Zilney, McGurrin, & Zahran, 2006).

This line of inquiry allows for the examination of the implications for victimization among poor disadvantaged communities as a consequence of such legislation. Resident perceptions of and reactions to sex offender policy has been qualitatively studied, and the literature suggests that many residents reported suspicions of racism as well as a sense of anger and despair that their neighborhoods had become a

dumping ground for sex offenders (see Zevits, 2003 and 2004). This research shows that residency restriction policies may victimize the groups who have the fewest resources to combat such oppression.

Even if offenders reside in more affluent areas, they may not remain there for long because such communities are better able to mobilize resources to eradicate sex offenders, and thus this may lead to a geographical clustering of offenders in more disadvantaged neighborhoods with fewer mobilization resources. There "are good reasons to suspect that a disproportionate share of the unintended consequences (of community notification legislation) will be borne by the most politically powerless members of society" (Hughes & Kadleck, 2008 p. 470).

Community notification and registration efforts also increase the risk of additional collateral consequences for the community and its residents, including the offender. When residents learn that a sex offender lives in their neighborhood, they may become fearful and harass, victimize, or discriminate against him/her (Tewksbury, 2005). When this occurs in affluent communities, it is likely to force offenders to relocate to less affluent areas and subject them to the undesirable consequences of such a move, as described earlier. Consequently, the offenders may become increasingly isolated and frustrated, possibly leading to increased recidivism.

CHAPTER 3

BACKGROUND, SIGNIFICANCE, & THEORY

Introduction

The literature dealing with 'neighborhood effects' suggests that living in a community that is characterized by poverty, inequality, and socioeconomic disadvantage increases the risk of a variety of negative outcomes, inclusive of recidivism (Kubrin & Stewart, 2006). On the other hand, residing in a community with ample resources, services, and/or amenities may mitigate negative outcomes, such as recidivism. Previous research on sex offenders indicates that residency restrictions force offenders to live in the former (poor and resource deficient) types of neighborhoods (e.g., Barnes et al., 2009; Hughes & Burchfield, 2008; and Zgoba et al., 2009). Therefore, residency restrictions may promote recidivism via neighborhood context. Public policies focusing only on the characteristics of the offenders often overlook the importance of neighborhoods. It is imperative that local areas be considered when evaluating the impact of reentry because these are the environments that contextualize the lives of offenders as well as non-offenders (Rose and Clear, 1998).

Residency Restriction Legislation & Its Efficacy

Since many sex offenders do not live or work near their victims, residency restriction legislation may not prevent recidivism or future assaults (Cohen & Jeglic, 2007). More specifically, the distance an offender lives from a school or a park has also not been found to have an impact on recidivism. The research that does exist on

residency restriction legislation suggests there is no correlation between offender residential location and sexual recidivism (Meloy, Miller, & Curtis 2008). The Minnesota Department of Corrections (2003, 2007) and the Colorado Depart of Public Safety (2004) are the leading agencies that have sought to empirically examine the correlation between registered sex offender residential location and recidivism. The Colorado Department of Public Safety study (2004) found that sex offenders who recidivated while under supervision were arbitrarily spread throughout the study area, and did not live any closer to schools or child care centers than non-recidivists. In addition, very few of the offenders engaged in any criminal behavior during the study period, perhaps suggesting that supervision, treatment, and surveillance may be more important in maintaining community safety than where a sex offender lives.

Similarly, a study conducted by the Minnesota Department of Corrections (2003) concluded that a sex offenders' proximity to schools or parks was not a significant factor with regards to recidivism. A sex offender was more likely to travel to another neighborhood to seek victims without being recognized. Sex offenders wishing to re-offend in such locations were more likely to travel so as to act in secret in a neighborhood where they were not known, thus undermining the efficacy of residency restrictions. In 2007, the Minnesota Department of Corrections issued a scathing critique of residency restriction legislation stating: "...not one sex offender released...has been re-incarcerated for a sex offense in which he made contact with a juvenile victim near a school, park, or daycare center close to his home. In short, it is unlikely that residence restrictions would have a deterrent effect because the type of offenses such a law is designed to prevent are

exceptionally rare...and virtually non-existent...(p. 25)." More recent and more empirically strenuous research by Zandbergen et al. (2010) echoes the findings of the above-referenced Minnesota study, finding no empirical association between a sex offender's residential location and reoffending against a minor. In other words, people who lived closer to the restricted locations were not more likely to reoffend than those who lived father away from such locations.

Residency Restrictions & Recidivism

Contemporary theorists associate several factors with sexual offending (Malamuth, 2003; Ward & Siegert, 2002): adverse family environments, social rejection, loneliness, and negative peer associations, all of which may be exacerbated by limitations on where registered offenders can live. Furthermore, there is evidence that sexual offenders are more likely than other offenders to respond to stress by carrying out inappropriate sexual acts and fantasies (Cortoni & Marshall, 2001). Correlates of recidivism include lifestyle instability, unemployment, substance abuse, emotional loneliness, and negative peer associations (Craissati & Beech, 2003). Residency restrictions may aggravate these conditions through the social rejection, isolation, and transience they create, thus promoting the very crimes they aim to prevent.

Restrictions that apply to all sex offenders (regardless of nature of offense, treatment received, etc.), such as residency restrictions, may fail to address individualized risk factors related to potential re-offending patterns (Ahlmeyer, Heil, McKee, & English, 2000). In addition to preventing recidivism, social re-integration is important not only

for the offender's quality of life, but also for the maintenance of the communities in which offenders reside. Social support as well as residential, financial, familial, and community stability have all been found to increase the probability of successful reintegration into the community by sex offenders (Petersilia, 2003). Studies have found that offenders without jobs or significant others have higher recidivism rates than those with strong social bonds to the community via family relationships and/or stable employment (Kruttschnitt, Uggen, & Shelton, 2000). Accordingly, residency restriction legislation may increase the risk of re-offending by creating stress for the offender and preventing proper settlement into a community. Freeman-Longo (1996) has documented several cases of released sex offenders losing their jobs or being evicted from housing as a result of notification and registration laws, and has argued that curtailing an offender's ability to earn a living and secure housing should be considered nothing less than "additional punishment for one's wrongdoing" (p. 7).

Further examining this notion of residency restriction laws leading to a lack of offender re-integration, a Kentucky-based study of more than one hundred registered sex offenders examined the "collateral consequences" of sex offender registration (Tewksbury, 2005 p. 67). More than half of the respondents reported that they had lost friends as a result of registration and the public knowledge of their offenses. Many also reported losing jobs, losing their previous housing, being harassed, and being treated rudely in public. Thus, while sex offender registries were created to promote public awareness of sex offender's identities and their whereabouts, they have instead been promoted as a method of enhancing public safety via the reduction of recidivism;

however, the data do not support the efficacy of the claim that sex offender registries have the ability to reduce recidivism (Tewksbury, 2005). Thus, rather than making the community safer, Tewksbury (2005) posits, these laws may push offenders into both physical and social isolation and cause them to lose the support systems that are critical to the prevention of recidivism.

Restrictions on a sex offender's place of residence might intensify the shortage of housing options for offenders, forcing them to move to rural areas where they would be increasingly socially isolated and faced with limited employment and treatment options (Minnesota Department of Corrections, 2003). Indeed, residency restrictions have been shown to potentially severely limit housing availability in urban, suburban, and rural areas alike (Cahjewski & Mercado, 2009; Zgoba et al., 2009). A majority of sex offender treatment specialists believe that certain skills need to be improved for treatment to be most effective (Freeman-Longo, 1996). Areas for skill building include poor anger management, fear, lack of trust, feelings of rejection, inadequate social skills, and low self-esteem. The improvement of skills is inhibited by the lack of a strong community support system and close ties to the community, which may be among the unintended effects of residency restriction legislation and the housing issues attributed to such a policy.

Residency Restrictions & Neighborhood Context

Much of the research examining where sex offenders reside has found that offenders live in socially disorganized areas (e.g., Hughes & Burchfield, 2008 and

Mustaine & Tewksbury, 2008). Several studies have identified housing instability, limited employment opportunities, limited access to social services and social support as among the consequences of residential restrictions for sex offenders (see Levenson & Hern, 2007 and Levenson, 2008).

One unintended consequence of residency restriction laws may be increased recidivism, if such legislation causes sex offenders to reside in disorganized neighborhoods lacking effective social control (Socia, 2011). Residency restriction legislation may also force offenders out of dense, urban neighborhoods due to the high numbers of child congregation centers in those areas (e.g., Chajewski & Mercado, 2009 and Zgoba et al., 2009). This exclusion may force offenders to live in areas with fewer employment, treatment, and transportation options, thus impeding their successful reintegration and rehabilitation. Sex offenders then may find themselves being pushed out of affluent and organized neighborhoods by a number of factors including housing availability and affordability, legal residency restrictions, as well as resident mobilization (Suresh et al., 2010).

Residential Patterns of Registered Sex Offenders

In examining the residential location pattern of registered sex offenders some studies (e.g., Tewksbury & Mustaine, 2006) have found that registered sex offenders whose victims were children are slightly more likely to reside near locations where children congregate than other types of sex offenders. Yet, it has not been demonstrated that this is because such offenders seek easy access to potential victims. It may be that

such locations offer more affordable housing options because they are in more urban areas. Furthermore, neighborhoods characterized by higher levels of social disorganization tend to contain higher concentrations of registered sex offenders (Mustaine & Tewksbury, 2006; Mustaine, Tewksbury, & Stengel 2006); yet it has not known whether this residential pattern is due to residency restriction legislation or other informal social controls that may be exercised by more affluent neighborhoods (Hughes & Burchfield, 2008).

Hughes and Kadleck (2008) and Hughes and Burchfield (2008) concluded that sex offenders were more likely to reside in disadvantaged neighborhoods. Yet, these same neighborhoods also contain higher proportions of schools and parks and thus, have less physical space available to sex offenders to legally reside. Thus, more affluent neighborhoods may have more space legally available to registered sex offenders to reside; yet, these neighborhoods are able to mobilize to protect themselves against those seen as socially undesirable.

Hughes & Kadleck (2008) theorize that the clustering of registered sex offenders in more socially disadvantaged neighborhoods as a result of the effective community mobilization or neighborhood affluence leads to the perpetuation of neighborhood social disorganization. Suresh at el., (2010) summarizes this argument stating, "...such (residential) clustering (of registered sex offenders) in more social disadvantaged neighborhoods could become a devastating self-fulfilling prophecy: with more sex offenders in residence community members may feel powerless to stop the influx and resort to withdrawing from social activities, neighborhood events, and neighborly

conversations....this social withdrawal of residents would in turn lead to an increase in social disorganization and criminal behavior (p. 184)." Thus, it may be argued that there is a reciprocal relationship between the number of registered sex offenders residing in a community and the community's level of social disorganization.

Recidivism, Reintegration & Neighborhood Context

Offender reentry raises questions about public safety and how communities can reintegrate prisoners. A pressing concern involves offenders' likelihood of re-offending and determining the factors that most influence recidivism (Kubrin & Stewart, 2006; Lynch & Sabol, 2001). For example, poverty, joblessness, welfare assistance, and similar conditions may make readjustment into society more difficult and increase the likelihood of reoffending (Kubrin & Stewart, 2006).

A large body of criminological research suggests that criminal behavior can be understood as an interaction between individuals and their surrounding environment(s) (Wikstrom et al., 2010 and Zimmerman 2010). Although the neighborhood effects literature has identified the role of neighborhood context in crime and victimization (e.g., Pratt & Cullen, 2005; Lowenkamp, Cullen, & Pratt, 2003; Osgood & Chambers, 2000; and Sampson & Groves, 1989), examinations of recidivism have largely focused on individual factors (e.g., Visher & Travis, 2003; Kubrin & Stewart, 2006). However, more scholars are realizing the need to understand how the social context to which offenders return affects their reintegration (see Clear, 2007 and LaVigne, Cowan & Brazzell, 2006).

Neighborhood context is fundamental to understanding not only why individuals offend, but also why offenders re-offend (Kubrin & Stewart, 2006).

Despite mounting evidence of its importance, neighborhood context has largely been excluded from the risk assessment process (Onifade et al., 2011). Recently, however, Hipp, Petersilia, and Turner (2010) found that parolees (made up of sex offenders as well as non sex offenders) returning to neighborhoods with higher levels of concentrated disadvantage were more likely to recidivate, controlling for individual factors. Kubrin & Stewart (2006) found that, controlling for individual factors including type of crime, offenders who return to disadvantaged neighborhoods recidivated at a higher rate than offenders who returned to affluent neighborhoods. Additionally, Onifade et al. (2011) found the risk-recidivism relationship to be modified by neighborhood socioeconomic ecology, finding that "distressed" block groups had higher rates of recidivism than "resilient" block groups. A fair amount of contextual studies have found that crime-related dynamics operate at the neighborhood level and are not reducible to the individual characteristics of residents; thus, individuals' rates of offending are determined, at least in part, by social forces in their wider environment (Kubrin & Stewart, 2006). More specifically, Tillyer and Vose (2011) found residential stability to be significantly related to recidivism in their study of the main and moderating influences of social ecology on recidivism. Thus, it can be seen that neighborhood context may exacerbate the relationship between individual risk and recidivism.

Research also suggests that offenders who are at a higher-individual risk for recidivism may be particularly vulnerable to a negative social/ecological context (Tillyer

& Vose, 2011). Sex-offenders may be at a higher individual risk than other offenders, given the social stigma associated with their crimes and the more restrictive mandates put upon them for a successful and legally compliant reintegration.

Social Services & Recidivism

Recent research supports the notion that the social context to which offenders return and social service agencies' geographic accessibility play important roles in successful reintegration and reduced recidivism (Hipp, Petersilia, & Turner, 2010). All residents of a community encounter the general social context of their neighborhood (be it positive or negative), but returning offenders have special needs related to substance abuse, financial stability, family conflict, and job skills. Thus, offenders often find it difficult to desist from criminal behavior because they have difficulty securing employment and housing (Hipp, Petersilia, & Turner, 2010; Petersilia, 1997).

Offenders, especially sex offenders, face special challenges for successful reentry into the community, including getting a job, securing a residence, attending treatment, and meeting other terms of their parole/supervision. Exacerbating these structural barriers to successful reentry are the individual-level barriers that inhibit offenders from meeting these obligations (i.e., successful employment, adherence to treatment, etc.), such as low educational attainment, a lack of job skills, and substance abuse issues. Thus, returning offenders are often in need to social service agencies to assist them with these problems. It has been argued (Kubrin and Stewart, 2006), therefore, that because of an ex-offender's reliance on community resources and services they are particularly affected by the social structural characteristics of their neighborhood.

Offenders reintegrating into contemporary society are less likely to have participated in education or vocational programs while in prison and are likely to have served longer sentences which Kubrin and Stewart (2006) argue are "conditions ripe for reoffending" (p. 168). Thus, neighborhood resources are critical for returning offenders, especially considering many offenders rely on various social service resources not only to reintegrate but also to comply with the terms and conditions of their community supervision which often include holding down a job, securing housing, and/or attending counseling (Petersilia, 1997).

If offenders are returning to neighborhoods that lack such services, they may find themselves less likely to reintegrate and more likely to recidivate (Zhang, Roberts, & Callanan 2006). Offenders who are integrated into the neighborhood via these services as well as social networks are less likely to recidivate (Hipp, Petersilia, & Tuner 2010). Such socials service agencies have been suggested to form a sort formal social capital in a neighborhood, thus giving them the potential capacity to help reintegrate offenders into society (Morenoff, Sampson, & Raudenbush, 2001). However, with particular regard to sex offenders it has been found that if sex offenders do have social service options available to them in their neighborhoods of residence such providers may not be able to properly assists these offenders as they experience higher levels of demand that in turn tax their resources (Hipp et al., 2009).

Empirical evidence reveals the inverse relationship between social services and recidivism. Attendance of community-based substance abuse programs (Anglin et al., 2002) and utilization of community employment programs (Bouffard, MacKenzie, and

Hickman, 2000) reduce recidivism and substance abuse. Physical proximity and other access to social service providers likely play important roles in their effects (Hipp, Petersilia, & Turner 2010). Without access to these resources, offenders are less likely to successfully reintegrate and more likely to recidivate (Kubrin & Stewart, 2006).

Theoretical Framework

Sex offenders commit a variety of offenses, (Parkinson et al., 2004) and Simon (1997) suggests that by fixating on sex offenders as a discrete category of criminals, scholars obscure the extent to which sexual offending is similar to other forms of criminal behavior. As such, it is logical to apply traditional criminological theories to this class of offenders. Furthermore, experts on sexual offending suggest that the etiology of this behavior should incorporate a variety of factors including socio-cultural context and transitory situational factors (Marshall and Barbaree, 1990). Therefore, this study will draw on social disorganization theory to understand how neighborhood context and residency restrictions may negatively impact registered sex offenders chances for successful reintegration and the prevention of recidivism. A second theoretical perspective, routine activities theory, is also utilized to contextualize the research. Given that residency restriction policies aimed at sex offenders are grounded in a routine activities approach, suggesting that removing offenders from locations where suitable targets are easily available will decrease recidivism, an analysis of these policies in the context of this approach is warranted.

Social Disorganization

Social disorganization theory is well-researched and is a core framework for ecological criminological research. The community conditions associated with criminal behavior has long been an emphasis of criminological research. In the past several decades a number of researchers have returned to and revitalized the arguments of social disorganization theory (Grattet, 2009). An expanding body of literature demonstrates that some neighborhoods are trapped in a cycle of disadvantage where neighborhood crime and disorder and certain structural characteristics are reciprocally influencing each other (see Hipp et al 2010 for a discussion).

The earliest formulation of social disorganization theory (Shaw & McKay, 1942) contended that neighborhoods see increases in crime when they are locked into a "cycle of disadvantage" (Hipp, Petersilia, & Tuner, 2010 p. 950) caused by economic disadvantage, racial/ethnic heterogeneity and residential instability (see following section for an in-depth discussion of these indicators). These three factors adversely affect social ties that otherwise would control and reduce crime via informal social control. Social disorganization then, reflects a disruption in residents' ability to solve problems in their community through informal community controls (Tillyer & Vose, 2011).

Mechanisms of Social Disorganization

A main tenet of social disorganization theory is that certain conditions affect residents' ability to realize common vales or solve commonly experienced problems in their neighborhood (Grattet, 2009). The concept of collective efficacy, as proposed by

Sampson et al. (1997), is part of a logical and generally accepted extension of the original social disorganization theory. This extension asserts that variation in crime rates correlated with the social organizational characteristics of a neighborhood are actually reflective of the differential ability of neighborhood's ability to maintain and exert social control and realize common values (as opposed to merely a product of the three structural variables described above). According to social disorganization theory, social deviance proliferates when certain ecological conditions inhibit a community's ability to regulate itself via the erosion of relational networks (Grattet, 2009).

Indeed, this crucial component of collective efficacy referring to the ability of neighborhoods or communities to effectively communicate, organize, mobilize, and work together to respond to and prevent undesirable conditions and or situations, inclusive of crime (Suresh et al, 2010) is often contingent upon the strength of both the formal and informal social institutions (schools, churches, law enforcement agencies, informal networks, etc.) present in the community. In communities where crime rates are high there can be said to be ineffective or absent social institutions, and thus social organizing against criminals.

Collective efficacy can be tied to routine activities theory as a lack of collective efficacy may be interpreted as a lack of guardianship (Suresh et. al, 2010). Thus, neighborhoods that exhibit collective efficacy and high levels of community organization will be most able protest and mobilize against registered sex offenders residing in their communities. Those neighborhoods which can't as effectively mobilize against such residential placement may find themselves with a disproportionate amount of offenders

residing in their communities. Furthermore, neighborhoods characterized as socially disorganized, by definition, have the least amount of social capital and ability to informally monitor and protect children from potential sexual predators (Suresh et al., 2010).

Shaw and McKay's (1942) classical conceptualization of social disorganization theory emphasized three indicators. The first is poverty, by which Shaw & McKay (1942) argued that impoverished areas would be less likely to resist the "in-migration of threatening others" (Grattet, 2009 p. 134) as they would be less likely to contain the necessary social strictures to resist such movement. Shaw and McKay's (1942) second indicator of social disorganization is racial/ethnic heterogeneity. The mechanism by which heterogeneity impedes social organization has been well explained by Kornhauser (1978). He suggests that heterogeneity obstructs communication which in turn hinders the ability to solve problems and reach common goals. In community contexts characterized by ethnic and racial heterogeneity it is increasingly difficult to establish and sustain a capacity for self-regulation which is dependent upon some degree of social solidarity and the ability to collectively respond to community problems. Shaw and McKay's (1942) third social disorganization indicator is residential turnover. It can be argued that residential turnover contributes to disorganization in a similar manner as racial and ethnic heterogeneity; neighborhoods that experience rapid loss and gain of population are unlikely to develop a capacity for self-regulation (Grattet, 2009).

Core structural variables remain at the heart of social disorganization theory. More recent work aims to clarify the roles of and causal mechanisms underlying these

variables. Andresen (2006) notes the importance of bearing in mind that while "..social/economic deprivation and family disruption have been shown to be the strongest predictors of criminal activity, ... it is not unemployment, education, and the presence of single-parent families, per se, that cause crime to occur, rather, the social conditions (discrimination, colonialism, racism, sexism, etc.) that generate these phenomena manifest themselves as the measured variables (p. 491)." Clearly, collective efficacy and cultural variables are crucial to enhancing our understanding of the neighborhood-crime nexus; yet, this data is better measured through survey data. Thus, this empirical study focuses on the more easily measured structural factors.

Integrating Routine Activities Theory

Originally presented by Cohen & Felson (1979) routine activities theory emphasizes three factors which converge in time and place to create an increased likelihood of crime and victimization. These three factors are motivated offender(s), suitable target(s), and the lack of a capable guardian or guardianship. The underlying assumption is that crime occurs as a part of the daily routine of people who see and seize enticing opportunities to commit crime. The issue then becomes what/whom qualifies as a suitable target and what/whom qualifies as a guardian, as the theory generally assumes a population of motivated offenders to be present. Drawing on the discussion of social disorganization theory outlined above, socially disorganized neighborhoods lacking in collective efficacy and informal social control are likely to present more alluring opportunities for crime by containing more vulnerable victims (suitable targets) and less supervision (guardianship). Indeed, Andresen (2006) argues for the synthesis of social

disorganization and routine activities theory as they are the two most common spatial theories of crime. The point of departure for research utilizing a social disorganization framework is that human behavior is situated in the context of place, making the location of crime and criminals an important dimension of analysis (Andresen, 2006). As indicated above, social disorganization theories argue that crime is best understood by considering the demographic, economic, and social aspects of such behavior; these aspects are similarly important in a routine activities approach; they affect the presence and/or absence of motivated offenders, suitable targets, and guardians. This study examines the potential for sex offenders to be forced to reside in socially disorganized areas. Following the logic of social disorganization theory, it is theorized that if registered sex offenders are forced to reside in such areas, the potential for recidivism is increased.

Social Disorganization & Offender Re-entry

The literature is growing on the mechanisms and dynamics of the processes of social disorganization variables in terms of crime and victimization and the relationship between these factors and offenders returning to the community from prison (see Clear 2007). Evidence suggests that neighborhoods with increased levels of concentrated disadvantage have higher recidivism rates (see Hipp et al., 2010 and Kubrin & Stewart, 2006). Thus, if returning offenders lack the ability to reside outside of such disadvantaged neighborhoods, the consequences could be negative. Recent studies have contributed to criminologists' awareness that returning offenders' ability to reintegrate into society can be affected by certain neighborhood characteristics. This emergent

literature suggests that if offenders are coming from and subsequently returning to the most disadvantaged neighborhoods this poses a heightened risk of recidivism (Hipp et al., 2010).

Since the social disorganization model posits that racial/ethnic heterogeneity, concentrated disadvantage, and residential stability affect neighborhood crime rates, these structural conditions may also impact the successful reintegration of offenders returning to the community (Hipp, Petersilia, & Turner 2010). Thus, offenders who return to neighborhoods with more social disorganization and less informal social control will have less success in reintegrating with society and more recidivism than offenders who return to neighborhoods with less disorganization and more informal social control, controlling for individual-level factors (Kubrin & Stewart, 2006).

The ability to form social ties and maintain informal social control in neighborhoods has become a pivotal point and empirically proven in the social disorganization literature (see Ross & Jang, 2000; Sampson, 1991; Warner & Rountree, 1997; and Lowenkamp, Cullen, & Pratt 2003). Accordingly, "to the extent that these informal ties allow residents to convey information about concerns, they likely help in providing the sort of informal social control that would dissuade a parole from recidivating" (Hipp, Petersilia, & Tuner, 2010 p.952). Recent recidivism studies (as outlined above) have demonstrated the applicability of the concepts of social disorganization and collective efficacy to recidivism (see Kubrin & Stewart, 2006; Grunwald et al., 2010; Hipp, Petersilia, & Turner, 2010). An offender's ability to successfully reintegrate into a community and pursue a conventional lifestyle is

constrained by highly disorganized neighborhoods, encouraging reoffending (Kubrin & Stewart, 2006).

In light of the stigmatization and legal residency constraints aimed at sex offenders, they are perhaps among the most likely to face restrictions upon their mobility than other types of returning offenders. As such, their ability to escape or move out of disorganization is further hindered. It is generally believed that offenders return from prison to the neighborhood they left behind. While this may be detrimental if offenders are coming from and returning to socially disorganized neighborhoods, sex offenders' inability to return to their prior residence due to legislative mandates may further inhibit their successful re-entry by removing and/or isolating them from informal social support mechanisms like family members. A novel study examining not only the initial residential locations of returning sex offenders but also subsequent locations based on relocations found "sex offenders experience a particularly pernicious downward cycle in neighborhood quality" by not only being released into neighborhoods with higher levels of concentrated disadvantage and residential instability but by also moving into increasing worse neighborhoods (based on these dimensions) with each subsequent move (Hipp et al., 2010 p. 580). This pattern of residential relocation suggests that legislation placing limits on sex offenders' access to certain types of neighborhoods may have the "steering effect" of clustering sex offenders together in the most socially disorganized neighborhoods (Hipp et al., 2010).

Research also supports the notion that crime makes a neighborhood more undesirable and may lower home values. Lower home values may then induce lower

income residents to migrate into these neighborhoods (Hipp et al., 2010). As such, the relationship between crime and social disorganization is reciprocal. As more lower-income residents move-in and move-out, disorganization will increase. Thus, to extend this to sex offenders and re-entry, sex offenders taking residence in certain locations may make the neighborhood less desirable, leading to the aforementioned process of increasing the level of social disorganization. Thus, "just as the social disorganization theory posts that residential instability and racial/ethnic heterogeneity will disrupt community social networks that otherwise enable the provision of informal social control sanctions that might minimize crime, both incarceration and reentry also affect these neighborhood ties (Hipp et. al, 2010 p. 562)."

The Present Study

This study seeks to validate previous research findings indicating that registered sex offenders are likely to be concentrated in residential locations with high levels of economic distress and low levels of community stability as a result of residency restriction laws (e.g., Levenson and Cotter, 2005; Walker, Golden, and VanHouten, 2001). It will explore the extent to which residency restriction laws force offenders to reside in areas with few, if any, social services. The underlying assumption is that these negative conditions will lead to higher recidivism rates among sex offenders. Note that this study's unit of analysis is not individuals, but rather neighborhoods. It explores how this context may lead to increased rates of recidivism. As the literature suggests, sex offender residency restrictions may adversely impact the successful reentry of offenders into the community. The factors that affect such successful re-entry include stable and

affordable housing, employment, strong social networks, and community reintegration. This study builds upon previous work examining the potential impact of residency restriction laws on successful offender reintegration utilizing social disorganization and routine activities theoretical frameworks.

Sex offender perceptual data, anecdotal evidence, and various qualitative studies have demonstrated that residency restriction laws are likely to result in negative and unintended consequences that may have a damaging influence on the factors statistically predictive of criminal desistance (Meloy, Miller, & Curtis 2008). Prior research has consistently demonstrated that registered sex offenders are residing in socially undesirable neighborhoods (see Levenson & Cotter, 2005 and Tewksbury, 2005 for examples). Yet, nearly all of the prior research utilizes residential addresses of registered sex offenders, which does not directly assess the impact of residency restriction legislation given that many offenders live in violation of such policies. Prior research on sex offenders residence has been based on mapping methodologies, self-reports, or physical inspections of registered sex offenders reported addresses (Suresh et al., 2010) and have consistently found that a large number of registered sex offenders indeed live in violation of residency restrictions or would be living in violation of residency restrictions if such legislation was to be imposed in their area of residence (Chajewsky & Mercado, 2009, Mustaine & Tewksbury, 2006).

Thus, the key contribution of this research is its evaluation of the potential implication of the residency restriction policy itself. This study utilizes "spatial restriction zones" (SRZ's) instead of sex offender's residential location to avoid the issue

of sex offenders not abiding by the SRZs. Research had demonstrated that "...neighborhoods with especially high levels of social disorganization tend to contain higher concentrations of RSO's..." (Suresh et al, 2010 p. 182); yet this research is crucial in determining if it is indeed the legislation itself causing this residential pattern or some other factor (i.e., the ability of organized areas to mobilize against and eradicate registered sex offenders form residing in their neighborhoods). Legal constraints coupled with stigmatization are likely to affect an offender's ability to move into less disorganized neighborhoods; yet, there is little evidence to date regarding the types of neighborhoods these offenders enter (Hipp et al., 2010). Thus, the present study provides an empirical spatial examination of sex offender residency restriction legislation in California in an effort to explore how it is related to factors indicative of social disorganization.

CHAPTER 4

METHODS

Introduction

This study uses American Community Survey (ACS) and other geographic data to examine the correlations between sex offender residential restriction zones and social disorganization variables. The study examines the geographic and statistical correlations between census tracts, schools, parks, and buffer zones and the resulting neighborhood[3] context. Geographic Information Systems (GIS) software will be used to examine the relationships among the variables outlined below. The analysis examines the characteristics of the geographic areas in which sex offenders can live and their relationship to risk factors associated with increased levels of recidivism. The study focuses on three southern California counties: Riverside County, San Bernardino County, and Orange County.

Research Questions

To examine if the spatial restriction zones (i.e., areas in which registered sex offenders are legally prohibited from residing) created by residency restriction legislation have the potential to force offenders to reside in neighborhoods characterized as more socially disorganized and containing fewer social services, the following research questions are addressed:

[3] Census tracts serve as a proxy for neighborhoods in this study

1) Are the census tracts which are less restricted (more available) to sex offenders more likely to be characterized as economically distressed, unstable, and racially heterogeneous compared to those census tracts which are more restricted (less available)?
2) Are the census tracts which are less restricted (more available) to sex offenders more likely to be characterized as containing fewer social service providers compared to those census tracts which are more restricted (less available)?

Research Design

The geographic unit of analysis for the study is the census tract. ACS data is used to develop the neighborhood context of the census tracts in each of the counties. Of important note is the issue of whether census tracts constitute or serve as proper proxies for neighborhoods, which has long been debated. In general, census tracts have stable boundaries and are geographically designed to be relatively homogeneous in terms of population characteristics, economic status, and living conditions (Kubrin & Stewart, 2006). Although they are not perfect, census tracts have been utilized as proxies for neighborhoods in most studies of neighborhood effects (see Sampson et al., 2002).

Sample

Apart from the large urbanized counties of San Diego and Los Angeles; Riverside, San Bernardino, and Orange counties have the largest populations of all California counties (California State Association of Counties, 2010). Riverside and San Bernardino counties make up what is known as the "inland empire" region of southern

California, one of the fastest growing metropolitan areas in the United States (California Employment Development Department, 2012). Given these counties' population sizes and their projected growth, they may be most affected by sex offender residency restriction legislation, as they will contain more schools and parks than other less populated counties. Orange County borders both San Bernardino and Riverside counties but is different from these counties in terms of its economic context and its extent of urbanization. Riverside County and San Bernardino County contain large areas of un-urbanized land, while Orange County is urban throughout. As such, differences found between these counties in terms of census tract restriction and social disorganization may be explained by the variation in their economic and urban contexts.

Data and Measurement of Independent Variable (Extent of Residency Restrictions)

The independent variable indicates the proportion in square-miles of a census tract's restrictedness in accordance with Proposition 83. The calculation of this measure required census tract polygon or lattice data and census tract street line data. The census tract polygon and street line data was obtained from the United Census Bureau's TIGER/Line[4] shapefiles geographic database. These files are extracts of geographic and cartographic information containing latitude/longitude coordinates and address ranges (Suresh at al., 2010).

[4] The term TIGER is an acronym for Topologically Integrated Geographic Encoding and Referencing. This is the name for the system and digital database developed at the U.S. Census Bureau to support its mapping needs. (http://www.census.gov/geo/www/tiger/overview.html)

Such data was obtained for the year 2007[5] for Orange, Riverside, and San Bernardino counties. This data was then used to create a census tract layer and a street map layer in ArcMap[6] for each of the counties. Once these layers had been created the next step was to identify the locations of schools and parks in order to be able to create the buffer zones around these locations in which registered sex offenders are prohibited from taking residence. The geographic (address) data pertaining to school site locations was collected via manual searches of school district listings for each of the three counties. All public pre-kindergarten, elementary, middle, high, and continuation schools for which addresses were available were included in the original database. The geographic (address) data pertaining to park locations was collected in a similar manner via manual searches of city and county public parks and recreation listings for each of the three counties. All public parks for which address or street-intersection location information was available were included in the original database. The addresses obtained and included in the aforementioned databases were then cleaned and matched utilizing the geocoding function and the United States Geocode Service 10.0 address locater file within ArcMap 10.0. This geocoding process locates, plots, and identifies the object (address) of each location on the previously created map utilizing the TIGER Street files discussed above. The automatic geocoding process was utilized to geocode the addresses. If an address resulted in a geo-coding match that had less than 95 percent geo-coding accuracy, an interactive re-matching geocoding process was used to ensure that the

[5] The year of interest in this study is 2007, given the passage of Proposition 83 in November 2006.
[6] ArcMap is the primary application used in ArcGIS and is used to display and explore geographic based datasets (http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#//006600000001000000)

correct locations were plotted on the map. The resulting number of schools and parks for each county is presented in Table 1. The final mapping product, thus, consists of the census tract boundary data, overlaid by the TIGER street files layer, overlaid by the geocoded address layer.

Table 1. School and Park Address Geocoding Data

	Orange County		Riverside County		San Bernardino County	
	Schools	Parks	Schools	Parks	Schools	Parks
	n	n	n	n	n	n
Full Sample	576	792	456	474	520	290
Geo-Coded Sample	570	632	383	364	480	226
95% or Higher Accuracy	422	514	298	258	402	182
Interactive Re-match	148	118	85	106	78	44

The next step in mapping the areas in which registered sex offenders are prohibited from residing requires the creation of 2,000 foot buffer zones around the locations of the schools and parks in each of the three counties. The distance value of 2,000 was chosen in accordance with the restriction mandated in Proposition 83. The buffer zones were created in ArcMap utilizing a 2,000 foot radius from the center of the address point for each geo-coded school and park location. Once the buffer zones had been created the area of these buffer zones was calculated in square miles. In order to determine what proportion of each census tract is contained within these buffer zones and therefore, prohibited to sex offenders, the area of the buffer zone contained in each census tract in square miles was divided by the total area in square-miles of each census tract. Thus, we now have a continuous measure of the proportion of census tract

restrictedness for each census tract in each county, which constitutes our independent variable of interest.

As noted above, this study utilizes point centroid data in the examination and creation of the schools, parks, and buffer zone data, meaning that addresses of schools and parks were geo-coded to a point location on the county map. The center (centroid) of this point location was subsequently utilized as the reference point to construct the 2,000 foot buffer zones around each school and park point location. Note that the use of polygons versus point data is preferable and accordingly, takes into consideration the outer boundaries of properties (Suresh et al., 2010). The use of point versus polygon data may have the effect of making the buffer zones smaller rather than larger, potentially inflating the amount of unrestricted area. Yet, property-line data were not available for this analysis. If significant results are found utilizing the less stringent mapping method of point data, the results would only be amplified if utilizing polygon data.

Data & Measurement of Dependent Variable

Census Tract Social Disorganization

To examine if the census tracts that are less restricted to sex offenders are more socially disorganized than the census tracts that are more restricted, data from the American Community Survey (ACS)[7] was used to measure the nature and extent of racial heterogeneity, concentrated disadvantage, and residential instability in the census tracts for each of the three counties of interest. ACS estimates of the variables outlined below

[7] Beginning with the 2010 data release the United State Census Bureau eliminated the use of a long-form which allowed for low level geographic aggregations of numerous economic and social indicators. As such, researchers are currently utilizing the ACS in an effort to re-create and analyze variables that are no longer available with the 2010 Census and beyond.

indicative of social disorganization at the tract level face issues of temporal aggregation, meaning that for such low-levels of geographic aggregation ACS data is only available for estimates spanning five year periods (e.g., 2006-2010). Thus, all ACS estimates are period estimates and should be interpreted as the average values over the full time-span of the period for that estimate.

ACS data was collected for the variables of interest for each of the three counties for three 5-year estimation periods: 2004-2008, 2005-2009, and 2006-2010. It can be argued that averaging the values of these three aggregate estimates for each variable would yield something like a point-in-time estimate for the mid time point of 2007. Preliminary diagnostic summary statistics revealed negligible differences between the averaged value of the three aggregate estimates (i.e., 2004-2008, 2005-2009, and 2006-2010) and the value of the 2005-2009 aggregate estimate alone. Thus, it was determined that the 2005-2009 data would be used to approximate a point-in-time estimate for the year 2007. Where data for 2005-2009 was unavailable or missing, these values were imputed using the average value of the 2004-2008 and 2006-2010 estimates.

To capture racial heterogeneity, the first social disorganization variable, a racial fragmentation index was used. The index represents the probability that any two randomly drawn individuals in a census tract will belong to different races (Alesina and La Ferrara, 2002). The index was calculated according to the following equation:

$$\text{Race}_i = 1 - \sum_{k} S^2_{ki}$$

where i represents a census tract and k the following races: (i) White alone; (ii) Black alone; (iii) American Indian alone or Alaskan Native alone; (iv) Asian alone; (v) Native Hawaiian alone or Pacific Islander alone; (vi) Other alone; and (vii) Two or more races. Each term S represents the share of race k in the total population of a census tract. The resulting values of the index may range from 0 to 1 with "0" indicating complete racial homogeneity and "1" indicating complete racial heterogeneity.

The indicators of residential instability and concentrated disadvantage are consistent with those in previous studies of recidivism and social disorganization (see Tillyer & Vose, 2001; Onifade et al., 2001; and Socia, 2011; Kubrin & Stewart, 2006; and Hipp, Petersilia, & Turner, 2010). The indicators of concentrated disadvantage are female-headed households with children, supplemental security income, and unemployment. Female-headed households are defined by the ACS as those maintained by a female "with no husband of the householder present"[8] with the presence of children under the age of 18. The data is calculated as a rate reflecting the proportion of the households in each census tract that meet the criteria outlined above. The unemployment measure that will be utilized from the ACS is one which defines unemployment as inclusive of "all civilians 16 years old and over are classified as unemployed if they (1) were neither 'at work' nor 'with a job but not at work' during the reference week, and (2) were actively looking for work during the last 4 weeks, and (3) were available to accept a job. Also included as unemployed are civilians who did not work at all during the reference week, were waiting to be called back to a job from which they had been laid

[8] Source: http://factfinder2.census.gov/help/en/american_factfinder_help.htm#glossary/glossary.htm

off, and were available for work except for temporary illness."[9] The unemployment data is calculated as a rate reflecting the proportion of the population of each census tract that meets the criteria outlined above. Supplemental security income is reflective to the proportion of households in each census tract receiving such financial assistance in the past 12 months.

The indicators of residential stability are vacancy, rentals, and turnover. Vacancy is indicative of the proportion of vacant housing units per census tract. Vacant housing units are defined in the ACS as housing units in which "no one is living in at the time of enumeration, unless its occupants are only temporarily absent....(or) units temporarily occupied at the time of enumeration entirely be people who have a usual residence elsewhere."[10] The variable "Rental Units" is indicative of the proportion of the housing units in a census tract that are renter-occupied. The ACS defines a renter-occupied housing units as "all occupied units which are not owner occupied, whether they are rented for cash rent or occupied without payment of cash rent, are classified as renter-occupied."[11] Residential turnover is constructed from an ACS variable called "year the householder moved into the unit" which refers to "the year of the latest move by the householder."[12] In an effort to construct a measure that is somewhat comparable to the Census Bureau's definition of residential turnover (the proportion of occupied housing units moved in the 5 years prior to the census date, e.g., 1995-2000 for the 2000 Census)

[9] ibid
[10] ibid
[11] ibid
[12] ibid

the proportion of householders moved in 2004 or later for the 2005-2009 ACS estimate was utilized as measure of residential turnover.

To summarize, in accordance with the previous literature it is expected that census tracts which are more restricted -- that is, less available for registered sex offenders to legally take residence -- will be characterized as less socially disorganized. Therefore, negative relationships between census tract restriction and the social disorganization variables are expected indicating census tracts less available (i.e. more restricted) will be characterized as: less racially heterogeneous; containing a smaller proportion of female-headed households with children; containing a smaller proportion of households on receiving supplemental security income; have lower unemployment rates; containing a small proportion of vacant housing units; containing a smaller proportion of housing units that are rentals; and experiencing less residential turnover.

Social Services

To examine if the less restricted (i.e., more available to sex offenders) census tracts contain fewer social service providers data on social service providers was retrieved from the California Department of Corrections and Rehabilitation (CDCR) provider database. This database is not exhaustive of all of the service providers that exist in the state, but because it was created for parole agents as a tool to guide parolees to various services, it likely captures the most important service providers as well service providers of which returning offenders are aware (Hipp, Petersilia, & Turner, 2010). Services and resources included in the database range from substance abuse services to anger management services, and many service providers are listed numerous times under

different categories. For the purposes of this study, service providers categorized under the labels of Mental Health Services, Vocational Services, Substance Abuse Treatment Services, Homeless Services, and Housing Services were included. The inclusion of these categories of services was chosen in accordance with the previously reviewed literature on offender re-entry and reintegration, as they are theorized to be those services that would be most necessitated by registered sex offenders attempting to reintegrate back into to society.

The addresses obtained from the CDCR provider database were then cleaned and matched utilizing the geocoding function and the United States Geocode Service 10.0 address locater file within ArcMap 10.0. The automatic geocoding process was utilized to geocode the addresses. If an address resulted in a geo-coding match that had less than 95 percent geo-coding accuracy an interactive re-matching geocoding process was used to ensure the correct locations were plotted on the map. The resulting number of service providers for each county is presented in Table 2 indicating the total number of service providers in each county.

Table 2. Service Provider Address Geocoding Data

	Orange County N	Riverside County N	San Bernardino County N
Full Sample	191	318	316
Geo-Coded Sample	189	280	308
95% or Higher Accuracy	159	224	238
Interactive Re-match	30	56	70

Analysis

Social Disorganization

In order to determine if census tract restriction is significantly correlated with social disorganization variables, a series of regression models are estimated utilizing two regression techniques. The first regression technique employed is ordinary least squares (OLS) regression conducted in STATA 10. The second regression technique employed is based on maximum-likelihood estimation (MLE) accounting for spatial error and autocorrelation and is conducted utilizing the open-source geo-spatial statistical analysis software GEODA. The use of both OLS and MLE estimation methods is necessary given recent research stressing the importance of the influential context of surrounding neighborhoods on the effects of offender reintegration and recidivism (Hipp, Petersilia, & Turner 2010). It is likely that the social context faced by a parolee does not end specifically at certain (geographically arbitrary) boundaries. Thus, considering the social context of nearby neighborhoods is also important. Moreover, it is important to account for spatial autocorrelation when dealing with small geographic units (like census tracts) because it is likely that the characteristics of one census tract may influence the characteristics of surrounding census tracts, and such autocorrelation holds the possibility of producing false-positive statistical results (Alaniz, et al., 1998). Furthermore, the use of OLS regression with spatial data is problematic due to the presence of spatial autocorrelation with the model residuals (Andreson, 2006). A series of diagnostic statistical tests was conducted for each model to ensure that the MLE-based spatial-error regression estimates are indeed more valid than those produced by the OLS regression

models. For each MLE model estimated two tests were conducted: 1)Breusch's-Pagan test for heteroskedasticity; and 2) a Likelihood Ratio test for spatial error dependence.

Prior to conducting the regression analysis preliminary diagnostics statistics were calculated to ensure that the distribution of the data for the variables of interest did not violate the underlying assumptions of OLS and MLE regression. As such, it was determined that data transformation was necessary for several variables. Utilizing the *ladder* function in STATA 10, it was determined that several data transformations were necessary in order to correct for skewness and normalize the distribution of the data. For Orange County the variable indicative of racial heterogeneity was transformed to equal the original value squared to correct for left skewness; and the variables indicative of female-headed households with children, supplemental security income, and vacancy were transformed to equal the square-root of the original values to correct for right skewness. For Riverside County the variables indicative of female-headed households with children, supplemental security income, vacancy, rental units, and turnover were transformed to equal the square-root of the original values to correct for right skewness. Finally, for San Bernardino County the variable indicative of racial heterogeneity was transformed to equal the original value squared to correct for left skewness; and the variables indicative of female-headed households with children, supplemental security income, and vacancy were transformed to equal the square-root of the original values to correct for right skewness. All analysis and results presented hereafter refers the transformed variables.

Four regression models are estimated for each county for each regression method. Each of the models outlined below utilizes the extent of census tract restrictedness as the independent variable and population density (measured as population per square mile in 2007 for each census tract) as a control variable. Model 1 is the "Race Model" and consists of the racial heterogeneity index as the dependent variable. Model 2 is the "Economic Model" and consists of female-headed households with children, supplemental security income, and unemployment as dependent variables. Model 3 is the "Stability Model" and consists of vacancy, rental units, and turnover as dependent variables. Model 4 is the "Full Model" and consists of all of the variables outlined above as dependent variables.

Social Service Providers

Regression analysis was conducted in a similar manner as outlined above the number of social service providers per census tract. However, the results revealed that there was not enough variability in the social service provider variable to support a reliable regression analysis. Thus, inferential descriptive statistical analysis was conducted with the use of a categorical measure of census tract restrictedness and the number of service providers per census. The analysis of the social service providers thus considered exploratory in nature and consist of comparing the average number of social service providers between various groups of restricted census tracts. Analysis of variance (ANOVA) testing is conducted to determine if significant differences between the mean number of service providers exists between categories of census tracts.

CHAPTER 5

RESULTS

County-Level Descriptive Statistics

Initial descriptive statistics for the three counties are reported in Table 3. The results show that the average values for the variables indicative of economic distress do not dramatically differ between the three counties. The average values for the variables indicative of community stability are similar across counties with the exception of the proportion of vacant housing units per census tract which averages at 0.050 for Orange County and 0.112 and 0.104 for Riverside and San Bernardino Counties respectively. Thus, the average vacancy rate for Riverside and San Bernardino counties is at least twice that of Orange County. The average values for racial heterogeneity are pretty consistent across the counties as well, ranging from 0.46 to 0.51 with Orange County having the least amount of racial heterogeneity among the counties and San Bernardino County having the most.

Table 3. Descriptive Statistics

	Orange County (n=570)				Riverside County (n=320)				San Bernardino County (n=233)			
Variable	$\bar{Y}$	SD	Min	Max	$\bar{Y}$	SD	Min	Max	$\bar{Y}$	SD	Min	Max
Female Headed Households*	.071	.046	.000	.295	.095	.060	.000	.355	.113	.067	.000	.419
Supplemental Security Income*	.034	.030	.000	.205	.048	.034	.000	.411	.058	.037	.000	.233
Unemployment*	.072	.033	.000	.199	.110	.050	.000	.290	.108	.049	.000	.290
Vacancy*	.050	.046	.000	.335	.112	.100	.000	.740	.104	.113	.000	.732
Rental Units*	.379	.225	.000	.579	.323	.196	.000	1.000	.355	.201	.000	.929
Turnover*	.325	.136	.000	.911	.365	.128	.073	.796	.341	.131	.000	.815
Racial Heterogeneity**	.461	.157	.000	.721	.481	.145	.092	.753	.512	.148	.000	.750
Census Tract Restriction**	.666	.294	.010	1.000	.396	.278	.000	1.000	.415	.300	.000	.989

*Measured as a proportion ranging from 0 to 1

** Measured as an index ranging from 0 to 1

There is however more variation in terms of the range of values of the social disorganization variables between counties. In terms of economic distress the proportion of female headed households with children per census tract ranges from 0.000 for all counties up to 0.295, 0.355, ad 0.419 for Orange, Riverside, and San Bernardino, counties, respectively, indicating that the census tract(s) in San Bernardino with the greatest proportion of female-headed households with children contain 33% or one-third more such households than the census tract(s) in Orange County with the greatest proportion of such households. A between-groups analysis of various (ANOVA) test determined that statistically significant differences exist between counties, $F(2, 1120) = 51.96$, $p = 0.000$. Post hoc analyses using the Scheffe post hoc criterion for significance indicated the mean proportion of female-headed households with children in Orange County ($M = .071$, $SD = .046$) is less than the mean proportion of female-headed households with children in either Riverside ($M = .095$, $SD = .060$), $F(2, 1120) = .024$, $p = .000$ or San Bernardino ($M = .113$, $SD = .067$), $F(2, 1120) = .041$, $p = .000$) counties.

Similarly, the mean proportion of female-headed households with children in Riverside County is less than the mean proportion of such households in San Bernardino County, $F(2, 1120) = .018$, $p = .001$. The proportion of households in each census tract receiving supplemental security income ranges from 0.000 to 0.205, 0.411, and 0.233 for Orange, Riverside, and San Bernardino counties, respectively, indicating that the census tract(s) in Riverside County with the greatest proportion of households receiving supplemental security contains nearly twice as many such households than the most restricted census tract(s) in either Orange or San Bernardino counties. A between- groups ANOVA test determined that statistically significant differences exist between counties, $F(2, 1120) = 50.71$, $p = 0.000$. Post hoc analyses using the Scheffe post hoc criterion for significance indicated the mean proportion of households receiving supplemental security income in Orange County ($M = .034$, $SD = .030$) is less than the mean proportion of female-headed households with children in either Riverside ($M = .048$, $SD = .034$), $F(2, 1120) = .015$, $p = .000$ or San Bernardino ($M = .058$, $SD = .037$), $F(2, 1120) = .024$, $p = .000$) counties. Similarly, the mean proportion of households receiving supplemental security income in Riverside County is less than the mean proportion of such households in San Bernardino County, $F(2, 1120) = .009$, $p = .005$. The proportion of the population in the labor force that is unemployed in each census tract ranges from 0.000 to 0.199, 0.290, and 0.290 for Orange, Riverside, and San Bernardino counties, respectively, indicating that census tract(s) containing the largest proportion of the labor force that is unemployed in Riverside and San Bernardino counties contain the same proportion of individuals while the census tract(s) in Orange County with the greatest proportion of the population in the

labor force that is unemployed contain about 10% less such individuals. A between-groups ANOVA test determined that statistically significant differences exist between counties, $F(2, 1120) = 110.74$, $p = 0.000$. Post hoc analyses using the Scheffe post hoc criterion for significance indicated the mean proportion of the population in the labor force that is unemployed in Orange County ($M = .072$, $SD = .033$) is less than the mean proportion of the population in the labor force that is unemployed in either Riverside ($M = .110$, $SD = ..050$), $F(2, 1120) = .038$, $p = .000$ or San Bernardino ($M = .108$, $SD = .049$), $F(2, 1120) = .036$, $p = .000$ counties. No statistically significant differences were found between the means for Riverside and San Bernardino counties respectively, $F(2, 1120) = -.002$, $p = 0.869$.

In terms of community stability the proportion of vacant housing units per census tract ranges from 0.000 to 0.335, 0.740, and 0.732 for Orange, Riverside, and San Bernardino counties, respectively, indicating that the census tract(s) in Riverside and San Bernardino counties with the greatest proportion of vacant housing units contain over twice as many such housing units as the census tract(s) in Orange County containing the greatest proportion of vacant housing units. A between-groups ANOVA test determined that statistically significant differences exist between counties, $F(2, 1120) = 74.42$, $p = 0.000$. Post hoc analyses using the Scheffe post hoc criterion for significance indicated the mean proportion of vacant housing units in Orange County ($M = .050$, $SD = .046$) is less than the mean proportion of vacant housing units in either Riverside ($M = .112$, $SD = .100$), $F(2, 1120) = .062$, $p = .000$ or San Bernardino ($M = .104$, $SD = .113$), $F(2, 1120) = .054$, $p = .000$) counties. No statistically significant differences were found between the

means for Riverside and San Bernardino counties respectively, F(2, 1120) = -.008, p = 0.712. The proportion of housing units characterized as rental units per census tract range from 0.000 to 0.579, 1.000, and 0.929 for Orange, Riverside, San Bernardino counties, respectively, indicating the census tract(s) in Riverside and San Bernardino counties containing the greatest proportion of rental units can be characterized as being nearly entirely or entirely composed of rental units. A between-groups ANOVA test determined that statistically significant differences exist between counties, F(2, 1120) = 7.04, p = 0.001. Post hoc analyses using the Scheffe post hoc criterion for significance indicated the mean proportion of housing units characterized as rental units in Orange County (M = .379, SD = .225) is greater than the mean proportion of housing units characterized as rental units in Riverside County (M = .323, SD = .198), F(2, 1120) = -.056, p = .001. No statistically significant differences were found between the means for Orange County and San Bernardino County F(2, 1120) = -.024, p = .445 or San Bernardino County and Riverside County F(2, 1120) = .032, p = .251. The average proportion of occupied-housing units moved in 2005 or later (herein referred to as residential turnover) per census tract ranges from 0.000, 0.073, and 0.000 to 0.911, 0.796, and 0.815 for Orange, Riverside, and San Bernardino counties respectively indicating the census tract(s) in Orange County with the highest proportion of residential turnover experience higher levels of such mobility than the census tract(s) in either Riverside or San Bernardino counties with the greatest proportion of residential turnover. A between-groups ANOVA test determined that statistically significant differences exist between counties, F(2, 1120) = 9.36, p = 0.001. Post hoc analyses using the Scheffe post hoc criterion for significance

indicated the mean proportion of residential turnover in Orange County (M = .325, SD = .136) is less than the mean proportion of residential turnover in Riverside County (M = .365, SD = .128). No statistically significant differences were found between the means for Orange County and San Bernardino County F(2, 1120) = .016, p = .393 or San Bernardino County and Riverside County F(2, 1120) = -.024, p = .097.

The level of racial heterogeneity per census tract ranges from 0.000, 0.092, and 0.000 to 0.721, 0.753, and 0.750 for Orange, Riverside, and San Bernardino counties respectively indicating a relatively similar range in racial composition amongst these counties. A between-groups ANOVA test determined that statistically significant differences exist between counties, F(2, 1120) = 9.26, p = 0.001. Post hoc analyses using the Scheffe post hoc criterion for significance indicated the mean level of racial heterogeneity in Orange County (M = .461, SD = .157) is less than the mean level of racial heterogeneity in San Bernardino County (M = .512, SD = .148). No statistically significant differences were found between the means for Orange County and Riverside County F(2, 1120) = .019, p = .185 or San Bernardino County and Riverside County F(2, 1120) = .031, p = .061.

Finally, in terms of census tract restriction the proportion of the census tract that is restricted in each county ranges from 0.000 to 1.000, 1.000, and 0.989 for Orange, Riverside, and San Bernardino counties, respectively, indicating that the census tract restriction ranges from census tracts being completely unrestricted to virtually completely restricted in all three counties. A between-groups ANOVA test determined that statistically significant differences exist between counties, F(2, 1120) = 113.82, p =

0.001. Post hoc analyses using the Scheffe post hoc criterion for significance indicated the mean level of census tract restrictedness in Orange County (M = .666, SD = .294) is greater than the mean level of census tract restrictedness in both Riverside (M = .396, SD = .278) San Bernardino (M = .415, SD = .300) counties. No statistically significant differences were found between the means for Riverside County and San Bernardino County $F(2, 1120) = 1.844$, $p = .763$.

Table 4. Orange County Descriptive Statistics by Level of Census Tract Restriction

	Female Headed Households	Supplemental Security Income	Unemployment	Vacancy	Rental Units	Turnover	Racial Heterogeneity
Less (30% or less) Restrcted Census Tracts (n=100)	0.051	0.022	0.061	0.069	0.345	0.330	0.373
Somewhat (30.1-60%) Restricted Census Tracts (n=103)	0.058	0.030	0.067	0.051	0.329	0.324	0.435
Moderately (60.1-90%) Restricted Census Tracts (n=208)	0.077	0.033	0.075	0.050	0.383	0.323	0.478
Severely (90.1-100%) Restricted Census Tracts (n=159)	0.086	0.044	0.079	0.039	0.427	0.327	0.512

Table 5. Riverside County Descriptive Statistics by Level of Census Tract Restriction

	Female Headed Households	Supplemental Security Income	Unemployment	Vacancy	Rental Units	Turnover	Racial Heterogeneity
Less (30% or less) Restrcted Census Tracts (n=100)	0.075	0.042	0.102	0.149	0.267	0.366	0.442
Somewhat (30.1-60%) Restricted Census Tracts (n=103)	0.107	0.053	0.112	0.098	0.351	0.359	0.484
Moderately (60.1-90%) Restricted Census Tracts (n=208)	0.107	0.513	0.115	0.078	0.359	0.366	0.533
Severely (90.1-100%) Restricted Census Tracts (n=159)	0.123	0.058	0.140	0.069	0.435	0.402	0.536

Table 6. San Bernardino County Descriptive Statistics by Level of Census Tract Restriction

	Female Headed Households	Supplemental Security Income	Unemployment	Vacancy	Rental Units	Turnover	Racial Heterogeneity
Less (30% or less) Restrcted Census Tracts (n=100)	0.087	0.056	0.106	0.146	0.288	0.343	0.443
Somewhat (30.1-60%) Restricted Census Tracts (n=103)	0.111	0.052	0.109	0.069	0.334	0.309	0.557
Moderately (60.1-90%) Restricted Census Tracts (n=208)	0.148	0.061	0.114	0.075	0.450	0.363	0.576
Severely (90.1-100%) Restricted Census Tracts (n=159)	0.160	0.089	0.094	0.084	0.559	0.392	0.537

Categorical Descriptive Statistics

The following descriptive statistics describe the average values of the social disorganization variables by county by level of census tract restriction as reported in Tables 4-6. In terms of female-headed households with children in the least restricted census tracts the average proportion of such households ranges between 0.051, 0.075, and 0.087 for Orange, Riverside, and San Bernardino counties, respectively. In the somewhat restricted census tracts the average proportion of female-headed households with children ranges between 0.058, 0.107, and 0.111 for Orange, Riverside, and San Bernardino counties, respectively. In the moderately restricted census tracts the average proportion of female-headed households with children ranges between 0.077, 0.107, and 0.148 for Orange, Riverside, and San Bernardino counties, respectively. In the most restricted census tracts the average proportion of female-headed households with children ranges between 0.086, 0.123, and 0.160 for Orange, Riverside, and San Bernardino counties, respectively. Overall, this indicates that across all counties the average proportion of female-headed households with children increases as census tract restriction increases.

In terms of supplemental security income in the least restricted census tracts the average proportion of households receiving such assistance ranges between 0.022, 0.042, and 0.056 for Orange, Riverside, and San Bernardino counties respectively. In the somewhat restricted census tracts the average proportion of households receiving supplement security income ranges between 0.030, 0.053, and 0.052 for Orange, Riverside, and San Bernardino counties, respectively. In the moderately restricted census tracts the average proportion of households receiving such assistance ranges between

0.033, 0.051, and 0.061 for Orange, Riverside, and San Bernardino counties, respectively. In the most severely restricted block groups the average proportion of households receiving supplemental security income ranges between 0.044, 0.058, and 0.089. These data indicate that across all counties the average proportion of households receiving public assistance either slightly increases or remains relatively stable as census tract restriction increases.

In terms of unemployment in the least restricted census tracts the average proportion of the population in the labor force that is unemployed ranges between 0.061, 0.102, and 0.106 for Orange, Riverside, and San Bernardino counties, respectively. In the somewhat restricted census tracts the average proportion of the labor force that is unemployed ranges between 0.067, 0.112, and 0.109 for Orange, Riverside, and San Bernardino counties, respectively. In the moderately restricted census tracts the average proportion of the labor force that is unemployed ranges between 0.075, 0.115, and 0.114 for Orange, Riverside, and San Bernardino counties, respectively. In the most severely restricted census tracts the average proportion of the labor force that is unemployed ranges between 0.079, 0.140, and 0.094 for Orange, Riverside, and San Bernardino counties, respectively. Overall, these data indicate that for Orange and Riverside counties the average proportion of the labor force that is unemployed increases slightly as census tract restriction increases. San Bernardino county data follow the same pattern with the exception of a small decrease in the average proportion unemployed between the moderately restricted and severely restricted census tracts.

Turning to the variables indicative of community stability in the least restricted census tracts the average proportion of vacant housing units ranges between 0.069, 0.149, and 0.146 for Orange, Riverside, and San Bernardino counties, respectively. In the somewhat restricted census tracts the average proportion of vacant housing units ranges between 0.051, 0.098, and 0.069 for Orange, Riverside, and San Bernardino counties, respectively. In the moderately restricted census tracts the average proportion of vacant housing units ranges between 0.050, 0.078, and 0.075 for Orange, Riverside, and San Bernardino counties, respectively. In the most severely restricted census tracts the average proportion of vacant housing units ranges between 0.039, 0.069, and 0.084 for Orange, Riverside, and San Bernardino counties, respectively. Overall, these data indicate that for Orange and Riverside counties the average proportion of vacant housing units decreases as census tract restriction increases. The data for San Bernardino county follow a slightly different pattern with the average proportion of vacant housing units slightly increasing between somewhat, moderately, and severely restricted census tracts yet still remaining less than the proportion of vacant units it the least restricted census tracts.

In terms of rental units in the least restricted census tracts the average proportion of housing units classified as rentals ranges between 0.345, 0.267, and 0.288 for Orange, Riverside, and San Bernardino counties, respectively. In the somewhat restricted census tracts the average proportion of housing units classified as rentals ranges between 0.329, 0.351, and 0.334 for Orange, Riverside, and San Bernardino counties, respectively. In the moderately restricted census tracts the average proportion of housing units classified

as rentals ranges between 0.383, 0.359, and 0.450 for Orange, Riverside, and San Bernardino counties, respectively. In the most severely restricted census tracts the average proportion of housing units classified as rentals ranges between 0.427, 0.435, and 0.559 for Orange, Riverside, and San Bernardino counties, respectively. Overall, these data indicate that for all counties the average proportion of housing units classified as rentals increases as census tract restriction increases. One exception to this pattern is seen in the data for Orange County which indicate a slight decrease in the average proportion of housing units classified as rentals between the less restricted and somewhat restricted census tracts.

In terms of residential turnover in the least restricted census tracts, the average proportion of occupied housing units moved in 2005 or later ranges between 0.330, 0.366, and 0.343 for Orange, Riverside, and San Bernardino counties, respectively. In the somewhat restricted census tracts the average proportion of occupied housing unties moved in 2005 or later between 0.324, 0.359, and 0.309 for Orange, Riverside, and San Bernardino counties, respectively. In the moderately restricted census tracts the average proportion of occupied housing units moved in 2005 or later ranges between 0.323, 0.366, and 0.363 for Orange, Riverside, and San Bernardino counties, respectively. Overall, these data indicate the relative stability of residential turnover as census tract restriction increases. The two main exceptions to this can be seen with the move from moderately restricted to severely restricted census tracts for both Riverside and San Bernardino counties for which both experience slight increases in residential turnover.

Finally, in terms of racial heterogeneity in the least restricted census tracts the average score on the racial heterogeneity index ranges between 0.373, .0442, and 0.443 for Orange, Riverside, and San Bernardino counties, respectively. In the somewhat restricted census tracts the average score on the racial heterogeneity index ranges between 0.435, 0.484, and 0.557 for Orange, Riverside, and San Bernardino counties, respectively. In the moderately restricted census tracts the average score on the racial heterogeneity index ranges between 0.478, 0.533, and 0.576 for Orange, Riverside, and San Bernardino counties, respectively. In the severely restricted census tracts the average score on the racial heterogeneity index ranges between 0.512, 0.536, and 0.537 for Orange, Riverside, and San Bernardino counties, respectively. Overall, these data indicate across all counties that as the census tract restriction increases so does the average score on the racial heterogeneity index. One exception to this pattern is noted between the moderately and severely restricted census tracts for San Bernardino County for which there is a slight decrease in racial heterogeneity as restriction increases.

Taken all together these statistics suggest that more restricted (i.e., less available) census tracts can generally be characterized as containing on average: 1) a greater proportion of female-headed households with children; 2) a greater proportion of the labor force that is unemployed; 3) a smaller proportion of vacant housing units; 4) a greater proportion of rental units; and 5) a more racially heterogeneous population. On the other hand, the average proportion of households receiving supplemental security income and the average proportion of occupied housing units moved in 2005 or later appear to remain relatively stable across restriction categories.

Table 7. Orange County Social Disorganization Characteristics OLS Regression and Spatial Model Results (n=570)

	Race Model		Economic Model		Stability Model		Full Model	
Variable	OLS	MLE	OLS	MLE	OLS	MLE	OLS	MLE
Racial Heterogeneity Index	28.975***	14.991**					23.0508**	21.534*
	7.345	8.887					8.624	9.841
	3.940	1.687					2.670	2.188
Female Headed Households/Children+			26.895‡	23.944‡			19.327	26.047*
			14.511	12.811			14.746	13.132
			1.850	1.869			1.310	1.983
Supplemental Security Income+			54.742***	30.363*			29.7677*	21.196
			14.166	13.139			15.051	13.488
			3.860	2.311			1.980	1.571
Unemployment			-22.057	-27.997			10.528	-3.311
			37.790	33.025			38.055	33.741
			-0.580	-0.848			0.280	-0.098
Vacancy+					-42.408***	-14.594	-31.2871**	-13.016
					11.038	10.088	11.454	10.349
					-3.840	-1.447	-2.700	-1.258
Rental Units					11.381	-2.213	-0.677	-8.878
					8.719	7.817	8.950	7.943
					1.310	-0.283	-0.080	-1.118
Turnover					-38.482**	-25.122*	-33.7636**	-26.507*
					12.954	11.127	13.342	11.358
					-2.970	-2.257	-2.530	-2.334

Note: Values in table are (in column order): unstandardized coefficient, standard error, *t*-statistic/z-value

*** p <.001 (two-tailed)

** p <.01 (two-tailed)

* p <.05 (two-tailed)

‡ P < .10 (two-tailed)

+ Data transformed to normalize variable distribution (data presented is for the square-root of the original variable value)

Regression Results

The descriptive statistics indicated that for some variables for some counties were significantly skewed and contained outliers. Thus, these variables were transformed to normalize their distribution and meet the assumptions underlying the regression technique.[13] The transformed variables are noted with a "+" on Tables 7-9.

[13] Regression models estimated utilizing the transformed variables yielded smaller standard errors and accounted for more of the variance in the dependent variables

Orange County

The results of the ordinary least squares (OLS) and spatial error regression utilizing maximum likelihood estimation (MLE) models for Orange County are presented in Table 7. The results for the race model indicate that for both the OLS and MLE regressions the more restricted a census tract is the higher the level of racial heterogeneity, and this finding is statistically significant for both estimation methods. Note, however, the effect size is cut in half between the OLS and MLE coefficients and the degree of significance drops slightly.

The results of the economic model indicate that for the OLS and MLE regressions the more restricted a census tract is, the greater proportion of female-headed households with children it contains, and this result is statistically significant. The effect size and significance level of this finding remains consistent between estimation methods. The OLS and MLE regressions also indicate that the more restricted a census tract is, the greater the proportion of households receiving supplemental security income it contains, and this finding is statistically significant. Note, however that effect size and significance level decrease between the OLS and MLE coefficients.

The results of the stability model indicate that for the OLS model the more restricted a census tract is, the less the proportion of vacant housing units and the less the amount of residential turnover. These results are statistically significant. However, in the MLE regression the relationship between census tract restriction and vacancy is no longer statistically significant. In addition, in the MLE regression the relationship between

census tract restriction and residential turnover decreases in both significance level and effect size.

The results of the full model indicate that for the OLS and MLE regressions the more restricted a census tract is, the higher the level of racial heterogeneity. This finding is statistically significant for both regressions. This result also mirrors the result of the race model, indicating that even when incorporating other socioeconomic factors into the model race remains a statistically significant variable. The results of the full model also indicate the more restricted a census tract is the greater the proportion of female-headed households with children it contains, and this result is statistically significant in the MLE model, but not the OLS model. This result indicates the incorporation of race and stability variables actually increases the statistical significance of this relationship. Additionally, results indicate the more restricted a census tract is the greater the proportion of households receiving supplementary security income it contains, and this result is statistically significant in OLS model but not the MLE model. This result reveals that the incorporation of race and stability variables into the model decreases the statistical significance of this relationship. The results of the full model also indicate the more restricted a census tract is the greater the proportion of vacant housing units it contains, and this result is statistically significant for the OLS regression but not the MLE regression. This mirrors the result of this variable in the stability model but indicates that the incorporation of economic variables and racial heterogeneity decrease the statistical significance of this relationship. The results of the full model also indicate the more restricted a census tract is the lower the level of residential turnover, and this finding is

statistically significant for both the OLS and MLE regression estimates. This result mirrors the result of the stability model indicating that the incorporation of economic variables and racial heterogeneity does not change the strength and direction of this relationship.

Table 8. Riverside County Social Disorganization Characteristics OLS Regression and Spatial Model Results (n=320)

	Race Model		Economic Model		Stability Model		Full Model	
Variable	OLS	MLE	OLS	MLE	OLS	MLE	OLS	MLE
Racial Heterogeneity Index	16.570*	10.734					8.585	7.414
	7.937	8.796					8.565	8.860
	2.090	1.220					1.000	0.837
Female Headed Households /Children[+]			3.537	1.126			-8.103	-3.134
			13.276	13.136			14.130	13.844
			0.270	0.086			-0.570	-0.226
Supplemental Security Income[+]			3.870	13.323			11.549	15.576
			15.355	14.862			15.676	15.440
			0.250	0.896			0.740	1.009
Unemployment			-16.432	-14.627			-31.172	-28.362
			25.943	26.100			25.448	25.648
			-0.630	-0.560			-1.220	-1.106
Vacancy[+]					-39.397***	-35.590***	-38.968***	-35.525***
					8.389	9.306	9.090	9.661
					-4.670	-3.824	-4.290	-3.677
Rental Units[†]					16.042*	13.313	16.9363[‡]	12.331
					8.834	8.540	9.197	9.209
					1.900	1.559	1.840	1.339
Turnover[†]					-27.264*	-22.735[‡]	-25.696*	-22.136[‡]
					12.705	12.710	12.903	12.822
					-2.150	-1.789	-1.990	-1.726

Note: Values in table are (in column order): unstandardized coefficient, standard error, *t*-statistic/z-value

*** p <.001 (two-tailed)

** p <.01 (two-tailed)

* p <.05 (two-tailed)

[‡] P < .10 (two-tailed)

[+] Data transformed to normalize variale distribution (data presented is for the square-root of the origianl variable value)

Riverside County

The results of the ordinary least squares (OLS) and spatial error regression utilizing maximum likelihood estimation (MLE) models for Riverside County are presented in Table 8. The results for the race model indicate that for both the OLS and MLE regressions, the more restricted a census tract is the higher the level of racial heterogeneity. However, this finding is only statistically significant for the OLS model.

The results of the economic model indicate that for the OLS and MLE regressions there are no statistically significant relationships between the variables indicative of economic distress and census tract restriction. The results of the stability model indicate that for both the OLS and MLE regressions, the more restricted a census tract is the less the proportion of vacant housing units and the less the amount of residential turnover, and this result is highly statistically significant for both estimation methods. The results of the stability model also indicate that the more restricted a census tract is the higher the proportion of rental units it contains. This finding is statistically significant for the OLS estimate but not the MLE estimate. The results of the stability model also indicate that as census tract restriction increases the amount of residential turnover decreases, and this result is statistically significant for the OLS and MLE estimates. However, the significance level of the MLE estimate is less than that of the OLS estimate.

The results of the full model indicate that as census tract restriction increases the proportion of vacant housing units. This result is highly statistically significant for both the OLS and MLE regression estimates ($p < .001$). These results also indicate as census

tract restriction increases the proportion of rental units increases, yet this finding is only statistically significant in the OLS estimate, and the inclusion of economic and racial heterogeneity variables decreases the significance of this relationship as compared to the stability model. The results of the full model also indicate that as census tract restriction increases, the amount of residential turnover decreases and this result is statistically significant for both the OLS and MLE estimates, indicating that the inclusion of economic and racial heterogeneity variables does not change the nature of this relationship from that found in the stability model.

Table 9. San Bernardino County Social Disorganization Characteristics OLS Regression and Spatial Model Results (n=233)

	Race Model		Economic Model		Stability Model		Full Model	
Variable	OLS	MLE	OLS	MLE	OLS	MLE	OLS	MLE
Racial Heterogeneity Index[†]	11.695	4.850					-3.921	-7.451
	9.978	11.177					10.615	11.264
	1.170	0.434					-0.370	-0.661
Female Headed Households /Children[+]			24.998	17.881			7.745	12.558
			15.392	14.858			16.836	16.292
			1.620	1.203			0.460	0.771
Supplemental Security Income[+]			27.366	34.750*			22.446	31.490[‡]
			17.820	17.631			18.241	17.907
			1.540	1.971			1.230	1.759
Unemployment			-47.1331[‡]	-52.499*			-27.645	-33.556
			27.153	26.622			27.628	26.977
			-1.740	-1.972			-1.000	-1.244
Vacancy[+]					-28.344**	-27.584**	-31.385**	-29.640**
					9.328	9.752	12.258	10.430
					-3.040	-2.828	-2.560	-2.842
Rental Units					30.936***	26.538**	24.834**	17.992[‡]
					8.623	8.862	9.966	10.032
					3.590	2.983	2.490	1.793
Turnover					-17.338	-14.607	-17.586	-10.558
					12.231	12.125	12.574	12.154
					-1.420	-1.205	-1.400	-0.869

Note: Values in table are (in column order): unstandardized coefficient, standard error, *t*-statistic/z-value

*** $p < .001$ (two-tailed)

** $p < .01$ (two-tailed)

* $p < .05$ (two-tailed)

[‡] $P < .10$ (two-tailed)

[+] Data transformed to normalize variale distribution (data presented is for the square-root of the origianl variable value)

San Bernardino County

The results of the ordinary least squares (OLS) and spatial error regression utilizing maximum likelihood estimation (MLE) models for San Bernardino County are presented in Table 9. The results of the economic model indicate that as census tract restriction increases, the proportion of households receiving supplemental security income also increases. This result is statistically significant for the MLE regression estimate. The results of the economic model also indicate as census tract restriction increases, the proportion of the labor force that is unemployed decreases, a relationship

that is statistically significant for both the OLS and MLE regression estimates, with an increase in the level of statistical significance moving from the OLS to MLE regression estimate.

The result of the stability model indicate as census tract restriction increases, the proportion of vacant housing units decreases, a finding that is statistically significant for the OLS and MLE regression estimates. The result of the stability model also indicate that as census tract restriction increases, the portion of rental units also increases and this result is statistically significant for both the OLS and MLE regression estimates, with a slight decrease in the level of statistical significance and effect size between the OLS and MLE estimates.

The results of the full model indicate as census tract restriction increases, the proportion of households receiving supplementary security income also increases, a relationship that is statistically significant for the MLE regression estimate. However, the level of significance decreases with the inclusion of stability and racial heterogeneity variables as compared to the economic model. The results of the full model also indicate as census tract restriction increases, the proportion of vacancy housing units it contains decreases, a finding that is statistically significant in both the OLS and MLE regression estimates. This indicates that the inclusion of economic and racial heterogeneity variables does not change the nature of this relationship from that found in the stability model. The results of the full model also indicate that as census tract restriction increases, the proportion of households characterized as rentals also increases. This finding is statistically significant for both the OLS and MLE regression estimates, with a

slight decrease in the significance level and effect size between the OLS and MLE estimates. This indicates a slight decrease in the significance of this relationship with the inclusion of economic and racial heterogeneity variables as compared to the stability model.

Regression Results Summary

The MLE regression results are the most robust and accurate indicators of the correlation between census tract restriction and social disorganization variables given the spatial autocorrelation inherent in the data.[14] Thus a re-cap of the general findings of the MLE results is warranted. Racial heterogeneity only proved statistically significant via the MLE regression method for Orange County, indicating increased census restriction is correlated with increased levels of racial heterogeneity. This finding opposes the prediction that more available census tracts will be more racially heterogeneous. For the economic variables female-headed households with children only proved statistically significant via the MLE regression method for Orange County, indicating increased census restriction is correlated with increased levels of female-headed households with children. This finding also opposes the prediction that more available census tracts will contain a greater proportion of female-headed households with children. Supplemental security income proved statistically significant via the MLE regression method for both Orange and San Bernardino counties indicating increased census tract restriction is

[14] MLE regression diagnostics for heteroskedasticity and spatial error dependence across all models for all counties indicated heteroskedasticity present in the data and spatial error autocorrelation, thus providing further evidence for the accuracy of the MLE results versus the OLS results

correlated with a higher proportion of households receiving such financial assistance. This finding opposes the prediction that more available census tracts will contain a greater proportion of households receiving financial assistance. Unemployment proved statistically significant via the MLE regression method for San Bernardino County only, indicating increased census tract restriction is correlated with lower levels of unemployment; however, this relationship was statistically significant only in the economic model, not the full model. This finding aligns with the prediction that more available census tracts will have higher unemployment rates. For the stability variables vacancy proved statistically significant via the MLE regression method for both Riverside and San Bernardino counties across all models, indicating that increased census tract restriction is correlated with a lower proportion of vacant housing units. This finding aligns with the prediction that more available census tracts will contain a higher proportion of vacant housing units. Rental units proved statistically significant via the MLE regression method for San Bernardino County only, indicating that increased census tract restriction is correlated with a higher proportion of rental units. This finding opposes the prediction that more available census tracts will contain a greater proportion of rental units. Finally, turnover proved statistically significant via the MLE regression method for Orange and Riverside counties, indicating increased census tract restriction is correlated with lower levels of residential turnover. This finding aligns with the prediction that more available census tracts will experience a greater amount of residential turnover. Overall, partial support was found for the hypotheses that decreased

census tract restriction (i.e., more availability) is correlated with higher levels of economic distress and residential instability.

Service Provider Descriptive Statistics

Orange County

The descriptive statistics indicating the number of service providers for Orange County are presented in Table 10. In Orange County there are 182 mental health, vocational, substance abuse, housing, & homeless service providers. The moderately restricted census tracts taken together contain the highest count of service providers (n = 70) while the least restricted census tracts taken together contain the lowest count of social service providers (n = 32). The average number of service providers per census tract restriction category reveals that census tracts in Orange County contain an average of 0.319 service providers per census tract. The somewhat restricted census tracts contain the highest average number of service providers (M = 0.359) per census tract while the most severely restricted census tracts contain the lowest average number of service providers (0.270) per census tract. Taken together, these results indicate that the somewhat and moderately restricted census tracts contain more social service providers than the less restricted census tracts. A between-groups analysis of variance (ANOVA) test determined that there is no statistically significant difference in the mean number of service providers between restriction categories $F(3, 566) = 0.35$, $p = 0.787$. Thus, the hypothesis that more restricted census tracts will contain a greater number of social service providers was not supported.

Table 10. Orange County Service Providers Descriptive Statistics

	Count	$\bar{x}$	s.d.	Min	Max
All Census Tracts (n=570)	182.000	0.319	0.754	0.000	6.000
Less (30% or less) Restrcted Census Tracts (n=100)	32.000	0.320	0.723	0.000	4.000
Somewhat (30.1-60%) Restricted Census Tracts (n=103)	37.000	0.359	0.906	0.000	6.000
Moderately (60.1-90%) Restricted Census Tracts (n=208)	70.000	0.337	0.750	0.000	6.000
Severely (90.1-100%) Restricted Census Tracts (n=159)	43.000	0.270	0.672	0.000	4.000

Riverside County

The descriptive statistics indicating the number of service providers for Riverside County are presented in Table 11. In Riverside County there is a total of 273 mental health, vocational, substance abuse, housing, & homeless service providers. The somewhat restricted census tracts taken together contain the highest count of service providers (n=106) while the most severely restricted census tracts taken together contain the lowest count of social service providers (n = 5). The average number of service providers per census tract restriction category reveals that census tracts in Riverside County contain an average of 0.853 service providers per census tract. The moderately restricted census tracts contain the highest average number of service providers (M = 1.153) per census tracts while the most severely restricted census tracts contain the lowest average number of service providers (M = 0.357) per census tract. Taken, together, these results indicate that the somewhat and moderately restricted census tracts contain more social service providers than the least restricted and most severely restarted census tracts. A between-groups analysis of variance (ANOVA) test determined no statistically

significant difference in the mean number of service providers between restriction categories $F(3, 326) = 0.35$, $p = 0.062$). Thus, the hypothesis that more restricted census tracts will contain a greater number of social service providers was not supported.

Table 11. Riverside County Service Providers Descriptive Statistics

	Count	$\bar{X}$	s.d.	Min	Max
All Census Tracts (n=570)	273.000	0.853	0.357	0.000	11.000
Less (30% or less) Restricted Census Tracts (n=100)	79.000	0.622	1.253	0.000	8.000
Somewhat (30.1-60%) Restricted Census Tracts (n=103)	106.000	0.991	1.628	0.000	10.000
Moderately (60.1-90%) Restricted Census Tracts (n=208)	83.000	1.153	2.114	0.000	11.000
Severely (90.1-100%) Restricted Census Tracts (n=159)	5.000	0.357	0.633	0.000	2.000

San Bernardino County

The descriptive statistics indicating the number of service providers for San Bernardino County are presented in Table 12. In San Bernardino County there is a total of 299 mental health, vocational, substance abuse, housing, & homeless service providers. The least restricted census tracts taken together contain the highest count of service providers (n=122) while the most severely restricted census tracts taken together contain the lowest count of social service providers (n=30). The average number of service providers per census tract restriction category reveals that census tracts in San Bernardino County contain an average of 1.283 service providers per census tract. The severely restricted census tracts contain the highest average number of social service providers ($M = 2.308$) while the moderately restricted census tracts contain the lowest average number of social service providers ($M = 1.107$) per census tract. Taken together,

these results indicate that the less restricted and somewhat restricted census tracts contain more social service providers than the moderately and severely restricted census tracts. A between-groups analysis of variance (ANOVA) test determined that there is no statistically significant difference in the mean number of service providers between restriction categories $F(3, 229) = 1.000$, $p = 0.393$. Thus, the hypothesis that more restricted census tracts will contain a greater number of social service providers was not supported.

Table 12. San Bernardino County Service Providers Descriptive Statistics

	Count	$\bar{x}$	s.d.	Min	Max
All Census Tracts (n=570)	299.000	1.283	2.300	0.000	16.000
Less (30% or less) Restricted Census Tracts (n=100)	122.000	1.220	2.476	0.000	14.000
Somewhat (30.1-60%) Restricted Census Tracts (n=103)	85.000	1.328	2.303	0.000	16.000
Moderately (60.1-90%) Restricted Census Tracts (n=208)	62.000	1.107	1.713	0.000	8.000
Severely (90.1-100%) Restricted Census Tracts (n=159)	30.000	2.308	3.016	0.000	9.000

Results Summary

Overall, the aforementioned results indicate that increasingly restricted census tracts in Orange County can be characterized as more racially heterogeneous, containing a greater proportion of female-headed households with children, and containing a greater proportion of households receiving supplemental security income. Increasingly restricted census tracts in Riverside County can be characterize as containing a smaller proportion of vacant housing units, a greater proportion of rental units, and experiencing less residential turnover. Increasingly restricted census tracts in San Bernardino County can

be characterized as containing a greater proportion of households receiving supplemental security income, having a lower unemployment rates, and containing a smaller proportion of vacant housing units. Thus, it is clear that the correlations between census tract restriction and the social disorganization variables presented here are not static, but rather vary across counties. These results draw attention to the varying effects that state-wide legislation can have in diverse geographic locations. Further interpretations and implications of these results will be discussed in the following chapter.

CHAPTER 6

DISCUSSION & CONCLUSION

Discussion

This study sought to determine if the census tracts more available for sex offenders to legally reside in can be characterized as more economically distressed and socially unstable than the census tracts that are less available for such offenders to legally reside. A secondary aim was to examine the relationship between census tract availability and the number of service providers located within census tracts to determine if more available census tracts contained fewer service providers than less available census tracts. Results indicated mixed results in terms of the relationship between census tract availability, economic distress, and community stability and these results varied between counties and estimation methods. No statistically significant results were found in terms of the relationship between census tract availability and the number of service providers.

Social Disorganization

The hypothesis that more available (less restricted) census tracts will be more racially heterogeneous overall was not supported. In the one case of a statistically significant relationship between these two variables, the relationship was in the opposite of the expected theoretical direction. Census tracts that are more racially heterogeneous may be less available to offenders because they are more densely populated and urban in nature and thus may contain a greater amount of restricted area. The hypothesis that more available (less restricted) census tracts will be more economically distressed was

partially supported. The variables female-headed households with children and supplemental security income proved statistically significant in the opposite of the theoretically expected direction indicating more available census tracts are less economically distressed in term of these variables. Unemployment was found to be statistically significant in one case in the theoretically expected direction indicating more available census tracts have higher rates of unemployment. The variation in these results may be due to the different dimensions of economic distress that these variables tap into. The hypothesis that more available (less restricted) census tracts can be characterized as more residentially unstable was also partially supported. The variables indicative of vacant housing units and level of residential turnover when statistically significant were so in the theoretically expected direction indicating more available census tracts have a higher proportion of vacant housing units and experience more residential turnover. The variable indicative of the level of rental units when statistically significant proved so in the opposite of theoretically expected direction indicating more available census tracts have lower levels of rental units. This finding indicates that while available census tracts may be less stable in terms of containing fewer rental units, they may also in turn be less affordable and have limited housing options available for offenders.

Between County Variation

As noted in the previous chapter the nature of the relationship between social disorganization and census tract availability varies across the three sample counties. This finding corroborates some of the conflicting findings in the literature regarding sex offender residential location and social disorganization, suggesting that the nature of sex

offender displacement may be dependent upon certain demographic features of the jurisdictions examined. For example, as noted previously, residency restriction legislation may have differential effects in more urban versus more rural environments. Because more densely populated areas are likely to have greater numbers of schools and parks, the impact of residency restriction legislation will be felt differently.

In Orange County, the most urban and wealthiest county under study, census tracts more available to offenders can be characterized as less socially disorganized in terms of disadvantage and racial heterogeneity. While this does not readily align with the theoretical predictions laid out in this study, it does indicate that in more urban counties housing affordability and availability may be more of an issue for offenders than the organization of the neighborhood. This suggests that low-poverty, more homogenous neighborhoods are likely to also be characterized as more desirable and thus containing less available housing options in terms of both number of residences and affordability of residences. Thus, in counties such as this, even if the area available to offenders to live is characterized as less socially disorganized, offenders may find themselves unable to take residence in such locations and be forced to live in violation of residency restriction legislation.

In San Bernardino County, the most rural and poorest county in the study, census tracts more available to offenders generally speaking can be characterized as more economically distressed and less stable. This suggests that in less densely populated counties the effects of residency restriction legislation may tend to push offenders to areas that are more socially disorganized. Finally, in Riverside County, the intermediate

county in terms of wealth and the rural nature of the counties studied, census tracts more available to offenders can be characterized as less stable in terms of containing more vacant housing units and experiencing more residential turnover. Thus, we see in this intermediate county the effect of residency restriction legislation may be to push offenders to less stable areas where housing may be more readily available and affordable but successful reintegration may be hindered by a negative quality-of-life. The demographic and geographic context of the counties may have a moderating effect the relationships found between the variables indicative of social disorganization and census tract availability.

Estimation Method Variation

As previously mentioned, the MLE regression results are the most robust and accurate indicators of the correlation between census tract restriction and social disorganization variables given the spatial autocorrelation inherent in the data. Accordingly, several predictors of social disorganization that tested statistically significant via the OLS estimation method either ceased to be statistically significant via the more robust spatial (MLE) estimation method or the level of significance decreased from one estimation method to the next. Such findings are indicative of the need to account for such characteristics of the data and of the importance of accounting for the nuanced and complicated relationship that exists between geographic and demographic data.

Service Providers

Prior research has suggested that residency restriction legislation has the potential to isolate offenders and force them to reside in areas that lack service providers that may be crucial to their successful re-entry into society (see Zhang, Roberts, & Callanan 2006). However, the results of this research did not provide support for a relationship between census tract availability and the number of service providers. It should be noted however that the mere presence of service providers is not indicative of the knowledge of or level of use of such service providers by registered offenders living in the community. Additionally, this finding aligns with prior research suggesting that sex offenders may indeed have access to services but the services are too few in number and thus may be overburdened (Hipp et al., 2009).

Conclusion & Policy Applications

The foregoing discussion suggests that residency restriction legislation can have divergent consequences. It may be the case in some jurisdictions that those areas characterized as more available to sex offenders may actually be more organized, but this does not mean that this is necessarily where offenders are living. The intent of this study was to examine the effects of residency restriction legislation in and of itself, not the effects of informal community processes seeking to rid communities of registered sex offenders. As such, these findings suggest that the legislation itself may not be the cause of the residential patterns amongst registered sex offenders reported in previous research (Mustaine & Tewksbury, 2006; Mustaine, Tewksbury, & Stengel 2006). Indeed, this

research demonstrates that socially disorganized densely populated areas are those most likely to have a greater number of schools and parks and thus a greater amount of restricted area. Thus, if sex offenders were to abide by residency restriction legislation they may actually find themselves residing in more organized areas, with more availability.

Much of the research to this point has documented residential patterns of registered sex offenders with the conclusion that such offenders tend to reside in socially disorganized areas (e.g., Hughes & Burchfield, 2008 and Mustaine & Tewksbury, 2008). In a similar vein, much of this research calls for the abolition or re-working of sex offender residency restriction legislation suggesting that such policies force offender to reside in undesirable areas. The findings of this research suggest that residency restriction legislation may not always result in offenders being forced to reside in socially disorganized areas in all instances. Residency restrictions are a one-size-fits-all solution to a diverse problem. Such universally implemented (regardless of offender risk-level) legislation is unlikely to actually reduce sexual violence and may actually increase rates of failure among some offenders. In line with other research on the topic, it would seem that a more effective approach to managing the sex offender population would be the implementation of empirically validated risk-assessment tools to predict the individual probability of re-offending in determining whether or not offenders should be subject to certain residential, or other restrictions. Policy makers and criminal justice practitioners should also take into consideration the plausibility of implementing and enforcing such

legislation given that locations legally available to offenders may not be practically available.

Limitations & Suggestions for Future Research

It is important to note that these findings may not be generalizable outside the context of California given the state-by-state variation in sex offender legislation. Furthermore, these results may not be generalizable to other counties within California as well. Clearly, the greater the number of locations that are deemed inappropriate for sex offenders to reside in close proximity to, the most limited the residential options become and so the likelihood of offender displacement increases. This study examines the state-level law in California which only lists schools and parks as such mandatory locations.

Future research utilizing more specific local laws and ordinances may present a more accurate picture of the jurisdictional differentiation that exists in terms of neighborhood availability and social disorganization. Additional areas of future inquiry should also address attempting to more empirically evaluate the informal social control mechanisms that may prevent offenders from residing in the areas that are legally available to them and a deeper examination of sex offender residential locations patterns comparing patterns based on residential addresses and legal/potential patterns based on spatial restriction zones.

REFERENCES

Ahlmeyer, S., Heil, P., McKee, B., & English, K. (2000). The impact of polygraphy on admissions of victims and offenses in adult sexual offenders. *Sexual Abuse: Journal of Research & Treatment, 12*(2), 123-138.

Alaniz, M., Cartmill, R., & Parker, R. (1998). Immigrants and violence: The importance of neighborhood context. *Hispanic Journal of Behavioral Sciences, 20*(2), 155-174.

Andresen, M. A. (2006). A spatial analysis of crime in Vancouver, British Columbia: A synthesis of social disorganization and routine activity theory. *The Canadian Geographer/Le Géographe Canadien, 50*(4), 487-502.

Anglin, M. D., Prendergast, M., Farabee, D., & Cartier, J. (2002). *Final Report on the Substance Abuse Program at the California Substance Abuse Treatment Facility (SATF-SAP) and State Prison at Corcoran.* Sacramento: California Department of Correction, Office of Substance Abuse Programs.

Barnes, J.C., Dukes, T., Tewksbury, R., & DeTroye, T. (2009). Analyzing the impact of a Statewide residence restriction law on South Carolina sex offenders. *Criminal Justice Policy Review,* 20, 21-43.

Bouffard, J., MacKenzie, D., & Hickman, L. (2000). Effectiveness of vocational education and employment programs for adult offenders: A methodology-based analysis of the literature. *Journal of Offender Rehabilitation, 31,* 1-41.

California Department of Correction and Rehabilitation (2010). 2010 Adult Institutions Outcome Evaluation Report. *Office of Research.*

California Employment Development Department. (2012). *Labor Market Information.* Retrieved May10, 2012 from http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/LocalAreaProfileComQSResults.asp?menuChoice=localAreaCom&selectedindex=1&area1=0604000059&countyName=&area2=0604000065&countyName=&area3=0604000071&countyName=.

California State Association of Counties (2010). California *Population Data.* Retrieved May 10, 2012 from http://www.counties.org/default.asp?id=399.

Castro, Hector. (2003). Sex offender registry failing. Seattle Post-Intelligencer. Retrieved February 19, 2007, from http://seattlepi.nwsource.com

Catalano, S.M. (2005). *Criminal victimization, 2004* (NCJ 162364). Washington, DC: U.S. Department of Justice.

Center for Sex Offender Management. (2001). *Sex offender myths.* Retrieved on February 19, 2007 from http://www.csom.org/.

Chajewski, M., & Mercado, C. (2009). An evaluation of sex offender residency restriction functioning in town, county, and city-wide jurisdictions. *Criminal Justice Policy Review, 20,* 44-61.

Clear, T. (2007). *Imprisoning Communities: How Mass Incarceration Makes Disadvantaged Neighborhoods Worse*. New York: Oxford University Press.

Clontz, Kenneth & J. Gayle Mericle (2002). *Within 500 feet: Do you know where your sex offenders are?* Retrieved on February 19, 2007 from http://gis.esri.com/library/userconf/proc02/pap0443/p0443.htm

Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American sociological review, 44,* 588-608.

Cohen, M., & Jeglic, E. (2007). Sex offender legislation in the United States: What do we know? *International Journal of Offender Therapy and Comparative Criminology, 50,* 369-383.

Colorado Department of Public Safety Division of Criminal Justice Sex Offender Management Board. (2004). *Report on safety issues raised by living arrangement for and location of sex offenders in the community.* Denver, CO.

Cortoni, F., & Marshall W. (2001). Sex as a coping strategy and its relationship to juvenile sexual history and intimacy in sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 13,* 27-43.

Craissati, J., & Beech, A. (2003). A review of dynamic variables and their relationship to risk prediction in sex offenders. *Journal of Sexual Aggression, 9(1),* 41-55.

Farkas, M. A., & Stichman, A. (2002). Sex offender laws: Can treatment, punishment, incapacitation, and public safety be reconciled? Cr*iminal Justice Review, 27*(2), 256-283.

Fisher, D., Beech, A.R., & Browne, K.D. (1999). Comparison of sex offenders to non-sex offenders on selected psychological measures. *International Journal of Offender Therapy and Comparative Criminology,* 43, 473-491.

Freeman-Longo, R. (1996). Revisiting Megan's law on sex offender registration: Prevention or problem. *American Probation and Parole Association.* Retrieved February 19, 2007, from http://www.appanet.org/resources/pubs/addition.htm

Grattet, R., Petersilia, J., & Lin, J. (2008). *Parole Violations and Revocations in California*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.

Greenfeld, L. A. (1997). *Sex offenses and offenders: An analysis of data on rape and sexual assault*. Washington, DC: US Department of Justice, Office of Justice Programs.

Grunwald, H., Lockwood, B., Harris, P., & Mennis, J. (2010). Influences of neighborhood context, individual history, and parenting behavior on recidivism among juvenile offenders. *Journal of Youth and Adolescence, 39,* 1067-1079.

Hanson, R.K. (2000). Will they do it again? Predicting sex-offense recidivism. *Current Directions in Psychological Science, 9(3),* 106-109.

Hanson, K., & Bussiere, M. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting & Clinical Psychology, 66,* 348-362.

Hanson, R. K., Gordon, A., Harris, A. J., Marques, J. K., Murphy, W., Quinsey, V. L., & Seto, M. C. (2002). First report of the collaborative outcome data project on the effectiveness of psychological treatment for sex offenders. *Sexual abuse: A journal of research and treatment, 14*(2), 169-194.

Hanson, R. & Harris, A. (2001). A structured approach to evaluating change among sexual offenders. *Sexual Abuse: A Journal of Research and Treatment,* 13, 105-122.

Hanson, R.K., Steffy, R.A., & Gauthier, R. (1993). Long term recidivism of child molesters. *Journal of Consulting and Clinical Psychology, 61,* 646-652.

Harris, A. J. R., & Hanson, R. K. (2004). *Sex offender recidivism: A simple question. (No. 2004-03).* Ottawa: Public Safety and Emergency Preparedness Canada.

Hipp, J. R., Jannetta, J., Shah, R., & Turner, S. (2009). Parolees' physical closeness to health service providers: A study of California parolees. *Health & place, 15*(3), 679-688.

Hipp, J., Petersilia, J., & Turner, S. (2010). Parolee recidivism in California: The effect of neighborhood context and social service agency characteristics. *Criminology, 48*, 947-979.

Hipp, J. (2010). A dynamic view of neighborhoods: The reciprocal relationship between crime and neighborhood structural characteristics. *Social Problems, 57*, 205-30.

Hughes, L., & Burchfield, K. (2008). Sex offender residence restrictions in Chicago: An environmental injustice? *Justice Quarterly, 25*(4), 647-673.

Hughes, L., & Kadleck, C. (2008). Sex offender community notifications and community stratification. *Justice Quarterly, 24*, 647-61.

Kornhauser, R. (1978). *Social Sources of Delinquency*. Chicago: University of Chicago Press.

Kruttschnitt, C., Uggen, C., & Shelton, K. (2000). Predictors of desistance among sex offenders: The interaction of formal and informal social controls. *Justice Quarterly, 17(1)*, 61-88.

Kubrin, C., & Stewart, E. (2006). Predicting who reoffends: The neglected role of neighborhood context in recidivism studies. *Criminology, 44*, 165-197.

LaVigne, N. L., Cowan, J., & Brazzell, D. (2006). *Mapping Prisoner Reentry: An Action Research Guidebook*. Washington, DC: Urban Institute, Justice Policy Center.

Levenson, J. S. (2008). Collateral consequences of sex offender residence restrictions. *Criminal Justice Studies, 21*(2), 153-166.

Levenson, J. S. (2006). Sex offender residence restrictions. Sex Offender Law Report, 7(3), 33; 46-47.

Levenson, J. (2003). Policy interventions designed to combat sexual violence: Community notification and civil commitment. *Journal of Child Sexual Abuse, 12*, 17-52.

Levenson, J.S., & Cotter, L.P. (2005). The impact of sex offender residence restrictions: 1,000 feet from danger or one step from absurd? *International Journal of Offender Therapy and Comparative Criminology, 49(2)*, 168-178.

Levenson, J. S., & Hern, A. L. (2007). Sex offender residence restrictions: Unintended consequences and community reentry. *Justice Research and Policy, 9*(1), 59-74.

Lösel, F., & Schmucker, M. (2005). The effectiveness of treatment for sexual offenders: A comprehensive meta-analysis. *Journal of Experimental Criminology, 1*(1), 117-146.

Lowenkamp, C., Cullen, F., & Pratt, T. (2003). Replicating Sampson and Grove's test of social disorganization theory: Revisiting a criminological classic. *Journal of Research in Crime and Delinquency, 40*, 351-73.

Lynch, J., & Sabol, W. (2001). Prisoner reentry in perspective. *Crime Policy Report, 3*, Washington DC: Urban Institute Justice Policy Center.

Malamuth, N.M. (2003). Criminal and noncriminal sexual aggressors: Integrating psychopathy in hierarchical-mediational confluence model. In R. A. Prentky , E. S. Janus , & M. C. Seto (Eds.), Annals of the New York Academy of Sciences: Vol. 989. Sexually coercive behavior: Understanding and management (pp.33-58). New York: New York Academy of Sciences.

Marshall, W.L. & Barbaree, H.E. (1990). Outcome of comprehensive cognitive-behavioral treatment programs. In H. Marshall, D., Laws, R., & Barbaree E. (Eds.), *The Handbook of Sexual Assault: Issues, Theories, and Treatment of the Offender* (pp. 297-310). New York: Plenum Press.

Marshall, W.L., Eccles, D.A., & Barbaree, H.E. (1993). A three-tiered approach to the rehabilitation of incarcerated sex offenders. *Behavioral Sciences and the Law,* 11, 441-455.

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

Mears, D., Wang, X., Hay, C., & Bales, W. (2008). Social ecology and recidivism: Implications for prisoner reentry. *Criminology, 46*, 301-340.

Meloy, M. L., Miller, S. L., & Curtis, K. M. (2008). Making sense out of nonsense: The deconstruction of state-level sex offender residence restrictions. *American Journal of Criminal Justice, 33*(2), 209-222.

Minnesota Department of Corrections. (2003).*Level three sex offenders residential placement issues.* St. Paul, MN.

Minnesota Department of Correction. (2007). *Sex Offender Recidivism in Minnesota.* St. Paul, MN.

Morenoff, J., Sampson, R., & Raudenbush, S. (2001). Neighborhood inequality, collective efficacy, and the spatial dynamics of urban violence. *Criminology, 39*, 517-59.

Mustaine. E., & Tewksbury, R. (2008). Registered sex offenders, recidivism, and the influence of race. *Journal of Ethnicity in Criminal Justice, 6,* 65-82.

Mustaine, E., Tewksbury, R., & Stengel, K. (2006). Social disorganization and residential locations of sex offenders: Is this a collateral consequence? *Deviant Behavior, 27*(3), 329-350.

National Criminal Justice Association. (2013). *Adam Walsh Act and SORNA.* Retrieved January 6, 2014, from http://www.ncja.org/Adam%20Walsh%20Act%20and%20SORNA.

Onifade, E., Petersen, J., Bynum, T. S., & Davidson, W. S. (2011). Multilevel recidivism prediction: Incorporating neighborhood socioeconomic ecology in juvenile justice risk assessment. *Criminal Justice and Behavior, 38*, 840-853.

Osgood, D., & Chambers, J. (2000). Social disorganization outside the metropolis: An analysis of rural youth violence. *Criminology, 38*, 81-115.

Parkinson, P., Shrimpton, S., Oates, R. K., Swanston, H. Y., & O'Toole, B. I. (2004). Nonsex offences committed by child molesters: Findings from a longitudinal study. *International Journal of Offender Therapy and Comparative Criminology, 48*(1), 28-39.

Petersilia, J. (2003). *When Prisoners Comes Home: Parole and prisoner reentry.* New York, NY: Oxford University Press.

Petersilia, J. (1997). Probation in the United States. *Crime and Justice, 22*, 149-200.

Peterson, R., Krivo, L., & Harris, M. (2000). Disadvantage and neighborhood violent crime: Do local institutions matter? *Journal of Research in Crime and Delinquency, 37*, 31-63.

Pratt, T., & Cullen, F. (2005). Assessing macro-level predictors and theories of crime: A meta-analysis. *Crime and Justice, 32*, 373-393.

Rose, D., & Clear, T. (1998). Incarceration, social capital, and crime: Implications for social disorganization theory. *Criminology, 36*, 441-479.

Ross, C., & Jang, S. J. (2000). Neighborhood disorder, fear, and mistrust: The buffering role of social ties with neighbors. *American Journal of Community Psychology, 28*, 401-420.

Sample, L., & Bray, T. (2003). Are sex offenders dangerous? *Criminology & Public Policy, 3(1),* 59-82.

Sample, L. L., & Kadleck, C. (2008). Sex Offender Laws Legislators' Accounts of the Need for Policy. *Criminal Justice Policy Review, 19*(1), 40-62.

Sampson, R., & Groves, W. (1989). Community structure and crime: Testing social disorganization theory. *The American Journal of Sociology, 94*, 774-802.

Sampson, R., Raudenbush, S., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*, 918-924.

Sampson, R., & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Sociology, 94*, 774-802.

Sampson, R. (1991). Linking the micro- and macrolevel dimensions of community social organization. *Social Forces, 70*, 43-64.

Sampson, R., Morenoff, J., & Gannon-Rowley, T. (2002). Assessing neighborhood effects: Social processes and new directions in research. *Annual Review of Sociology, 28*, 443-478.

Schram, D. & Milloy, C.D. (1995). Community notification: A study of offender characteristics and recidivism. Olympia: Washington State Institute for Public Policy.

Shaw, C., & McKay, H. (1942). *Juvenile delinquency and urban areas.* Chicago: University of Chicago Press.

Simon, L. (1997). Do criminal offenders specialize in crime types? *Applied & Preventive Psychology, 6,* 35-53.

Snyder, H. N. (2000). *Sexual Assault of Young Children as Reported to Law Enforcement: Victim, Incident, and Offender Characteristics.* Washington, D.C.: U.S. Department of Justice.

Socia, K. (2011). The policy implications of residence restrictions on sex offender housing in Upstate NY. *Criminology & Public Policy, 10,* 351-

Socia, K., & Stamatel, J. (2010). Assumptions and evidence behind sex offender laws: Registration, community notification, and residence restrictions. *Sociology Compass, 4*(1), 1-20.

Sorenson, J. & Stemen, D. (2002). The effect of state sentencing policies on incarceration rates. *Crime & Delinquency, 48,* 456-475.

Suresh, G., Mustaine, E., Tewksbury, R., & Higgins, G. (2010). Social disorganization and registered sex offenders: An exploratory spatial analysis. *Southwest Journal of Criminal Justice, 7,* 180-213.

Tewksbury, R. (2002). Validity and utility of the Kentucky sex offender registry. *Federal Probation, 66,* 21.

Tewksbury, R. (2005). Collateral consequences of sex offender registration. *Journal of Contemporary Criminal Justice, 21(1),* 67-81.

Tewksbury, R., & Mustaine, E. E. (2006). Where to find sex offenders: An examination of residential locations and neighborhood conditions. *Criminal Justice Studies, 19*(1), 61-75.

Tillyer, M. S., & Vose, B. (2011). Social ecology, individual risk, and recidivism: A multilevel examination of main and moderating influences. *Journal of Criminal Justice, 39,* 452-459.

Turner, B., Bingham, J., & Andrasik, F. (2000). Short-term community-based treatment of sexual offenders: Enhancing effectiveness. *Sexual Addiction & Compulsivity, 7,* 211-223.

Visher, C., & Travis, J. (2003). Transitions from prison to community: Understanding individual pathways. *Annual Review of Sociology, 29,* 89-113.

Walker, J.T., Golden, J., & VanHouten, A.C. (2001). The geographic link between sex offenders and potential victims: A routine activities approach. *Justice, Research, and Policy, 3(2),*15-34.

Ward, T., & Siegert, R.J. (2002). Toward a comprehensive theory of child sexual abuse: A theory knitting perspective. *Psychology, Crime, & Law, 8,* 319-351.

Warner, B., & Rountree, P. (1997). Local social ties in a community and crime model: Questioning the systemtic nature of informal social control. *Social Problems, 44,* 520-536.

West, D. (2000). Paedphilia: plague or panic? *The Journal of Forensic Psychiatry, 11(3),* 511-531.

Wikstrom, P., Ceccaato, V., Hardie, B., & Treiber, K. (2010). Activity fields and the dynamics of crime: Advancing knowledge about the role of the environment in crime causation. *Journal of Quantitative Criminology, 26,* 55-87.

Worrall, J.L. (2004). The effect of three-strikes legislation on serious crime in California. *Journal of Criminal Justice, 32,* 283-296.

www.83yes.com . (2006).

Zandbergen, P.., Levenson, J., & Hart, T. (2010). Residential proximity to schools and daycares: An empirical analysis of sex offense recidivism. *Criminal Justice and Behavior, 37,* 482-502.

Zevitz, R. G. (2003). Sex offender community notification and its impact on neighborhood life. *Crime Prevention & Community Safety, 5,* 41-61.

Zevitz, R. G. (2004). Sex offender placement and neighborhood social integration: The making of a scarlet letter community. *Criminal Justice Studies, 17*(2), 203-222.

Zevitz, R.G., & Farkas, M.A. (2000). Sex offender community notification: Managing high risk criminal or exacting further vengeance. *Behavioral Sciences and the Law, 18,* 375-391.

Zgoba, K., Levenson, J., & McKee, T. (2009). Examining the impact of sex offender residence restrictions on housing availability. *Criminal Justice Policy Review, 20,* 91-110.

Zhang, S., Roberts, R. E., & Callanan, V. (2006). Preventing parolees from returning to prison through community-based reintegration. *Crime and Delinquency, 52,* 551-71.

Zilney, L. A., McGurrin, D., & Zahran, S. (2006). Environmental justice and the role of criminology: An analytical review of 33 years of environmental justice research. *Criminal Justice Review, 31,* 47-62.

Zimmerman, G. (2010). Impulsivity, offending, and the neighborhood: Investigating the person-context nexus. *Journal of Quantitative Criminology, 26,* 301-332.