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# To Register or Not to Register? The Effectiveness of Megan's Law in Pennsylvania

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*TO REGISTER OR NOT TO REGISTER?*

THE EFFECTIVENESS OF MEGAN'S LAW IN PENNSYLVANIA

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Philosophy

Shelly L. Clevenger

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May 2012

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This study assessed the effectiveness of Megan's Law in Pennsylvania. Both the original version of Megan's Law, passed April 21, 1996 and the revised version, passed November 24, 2004, were examined. The original version of Megan's Law required individuals convicted of a sex offense to register with law enforcement and also notify residents in the community. The revised version of Megan's Law made an Internet registry available to the public of all registered sex offenders in the state of Pennsylvania.

Pennsylvania Uniform Crime Report (UCR) data was used in both annual and monthly form. The annual data set included the years 1974-2009. The monthly data set included 2001-2010. An interrupted time-series design (ITS) and ARIMA modeling as a data analysis technique were used to determine the effectiveness of Megan's Law in Pennsylvania. The outcome variables included: urban rape; suburban/rural rape; rape of an individual under the age of 18; rape of an individual over the age of 18; murder of an individual 14 and under; urban sex offenses; and suburban/rural sex offenses. Nonequivalent dependent variables included: urban murder; suburban/rural murder; murder of an individual 15 and over; urban aggravated assault; suburban/rural aggravated assault; urban robbery; and suburban/rural robbery.

The data indicated mixed results regarding the effectiveness of Megan's Law in Pennsylvania. A decrease was seen some dependent variables, such as urban rape after the original and revised version of Megan's Law; murder of an individual 14 and under; and urban sex offenses after the revised version of Megan's Law. However, there was an increase in

suburban/rural rape and sex offenses for both versions of the law. A discussion is offered to address potential influences and explanations for these findings, as well as suggestions for future research to further examine the impact of Megan's Law in Pennsylvania.

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## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
II. AN EXAMINATION OF THE HISTORY AND EMPIRICAL REASEARCH.....	12
Introduction.....	12
History of Megan’s Law.....	13
Process and stakeholder evaluations.....	19
Research examining the efficacy of Megan’s Law.....	27
Methodological issues of past research.....	37
Process of policy analysis and researching law effectiveness.....	41
III. THEORETICAL FRAMEWORK.....	46
Introduction.....	46
Historical overview.....	47
Routine activities theory.....	49
Rational choice theory.....	57
Rational choice meets routine activities theory.....	65
IV. METHODS.....	68
Independent variables.....	68
Dependent variables.....	69
Conceptual definition.....	72
Operational definition.....	73
Data.....	73
ITS design.....	74
Hypotheses.....	75
Threats to validity.....	77
V. ANALYSIS.....	83
Interrupted Time-Series Design Analysis.....	83
Data analysis.....	89
Statistical summary.....	111
VI. DICUSSION AND CONCLUSION.....	117
Summary of findings.....	117
Megan’s Law ineffective in Pennsylvania.....	127
Policy implications.....	129
Research limitations and suggestions for future research.....	132
Conclusions.....	137

REFERENCES.....	140
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## LIST OF TABLES

### Table

1	SPSS Time Series regression output for the original version of Megan's Law suburban/rural sex offenses ARIMA Model (1, 0, 0) (0, 0, 0).....	94
2	The effectiveness of the original version of Megan's Law: Dependent variables.....	96
3	The effectiveness of the original version of Megan's Law: Nonequivalent dependent variables.....	98
4	Murder and rape victims by age.....	102
5	The effectiveness of the revision of Megan's Law: Dependent variables.....	105
6	The effectiveness of the revision of Megan's Law: Nonequivalent dependent variables.....	110

## LIST OF FIGURES

### Figures

1	Sequence plot of suburban/rural sex offenses.....	90
2	ACF suburban/rural sex offenses.....	91
3	PACF suburban/rural sex offense.....	92
4	ACF for suburban/rural sex offenses ARIMA Model (1, 0, 0) (1, 0, 0).....	92
5	PACF for suburban/rural sex offenses ARIMA Model (1,0, 0) (1, 0, 0).....	93
6	Sequence plot of urban aggravated assault.....	107
7	Sequence plot of urban aggravated assault.....	108
8	ACF for urban aggravated assault ARIMA Model (0, 1, 0) (2, 0, 0) <sub>12</sub> .....	108
9	PACF for urban aggravated assault ARIMA Model (0, 1, 0) (2, 0, 0) <sub>12</sub> .....	109

## CHAPTER I

### INTRODUCTION

The implementation of Megan's Law, in date, created a community notification system and made sex offender registries available to the public. Megan's Law was imposed with the goal of reducing sex offenses (Vasquez, Maddan and Walker, 2008) and, therefore, can be viewed as a tool intended for crime prevention. The rationale behind the law was that, as a result of being informed of sex offenders living in their neighborhood, citizens can take precautions to avoid interactions with offenders. Parents and schools can work to ensure that children do not come into contact with offenders. Individuals can take proactive measures such as changing their daily routines to separate themselves from the offenders living in their community. The implementation of the registry could potentially lower rates of sexual offenses because community members may notice and report suspicious activities of registered offenders.

Megan's Law is a controversial topic and one which has had much media coverage. Attention first began to be drawn to the topic of child sexual abuse, abduction and murder in the late 1980's when a moral panic was created as a result of a dramatic increase in the coverage of these topics in the news as well as frequent portrayal on talk shows (Hechler, 1988; Jenkins, 1998). Media attention continually was drawn to the topics of sex crimes again in the 1990's as the media latched on to the stories of Jacob Wetterling, Pam Lyncher and Megan Kanka (Levenson and D'Amora, 2007), eventually resulting in the passage of pieces of legislation bearing their names. Despite the wide media coverage and support for the law by the public and politicians, the actual effectiveness of Megan's law has only been minimally researched. There is no current consensus in the literature regarding whether the use of community notification and

the registry as mandated by Megan's Law can effectively reduce sex crime rates through prevention.

The first researchers to examine the efficacy of Megan's law were Schram and Milloy (1995) in their study of 139 sex offenders ,who were categorized as a level three on the sex offender registry, and 90 sex offenders, who were not subject to notification and registration. They compared recidivism between the two groups, that of juveniles with adults. They concluded that the registry had little effect on recidivism. Second, Petrosino and Petrosino (1999) assessed the effect of Megan's Law by examining the rates of recidivism of sex offenders in Massachusetts. They concluded that the accomplishment of the overall goal of the law, which is to promote public safety and the prevention of stranger predatory crimes, is limited.

One of the most recent team of researchers to examine the effectiveness of Megan's Law effectiveness was Vasquez et al. (2008). They explored the general deterrent effect of Megan's Law on the crime of forcible rape in ten states using an interrupted time series (ITS) design. The Uniform Crime Report served as their data source. They found that most states (six of the ten) had consistent rape rates, with no statistically significant change, before or after the implementation of the law. Only three states (Ohio, Hawaii and Idaho) had a statistically significant decrease in rape rates associated with the implementation of the law. Four states showed an increase in rape rates after the law went into effect.

In addition, Sandler, Freeman and Socia (2008) examined the deterrent effect of sex offender registration and notification policies in the state of New York upon first and subsequent sex offenses for adult offenders using time series analysis. Sandler et al. (2008) utilized offender criminal histories as their data source, which came from the New York State Division of Criminal Justice Services. Their research indicated that the enactment of a sex offender

registration and notification law in the state of New York had no significant impact on sexual offenses for either first time offenders or repeat offenders for the offenses of rape or child molestation.

Finally, the most recent research conducted on the effectiveness of Megan's Law was performed by Letourneau, Levenson, Bandyopadhyay, and Sinha (2010). Using a time series analysis, they examined the general deterrent effect that the South Carolina sex offender registration and notification (SORN) policy had on adult sex crimes. Letourneau et al. (2010) utilized adult arrest data from the South Carolina computerized criminal history records (CCHR) database for male defendants 18 or older who were arrested between January 1, 1990 and December 31, 2005. Based on their findings, they concluded that the South Carolina sex offender registration and notification policy was successful in having a general deterrent effect on first time sexual offenders.

The dearth of research that has been conducted and the mixed results that have been obtained would seem to indicate that additional research is needed in order to get a more complete picture of the impact of Megan's Law. The current study provides further insight into the effectiveness of Megan's Law as a result of examining multiple crimes that are targeted by Megan's Law and also examining the effect of the legislation on urban versus rural crime rates. Also, the current research uses nonequivalent dependent variables to better assess the effectiveness of Megan's Law by controlling for validity threats.

### **Megan's Law; Federal mandates and the law in Pennsylvania**

Sex offender registries first became nationally implemented under the Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act (42 U.S.C. 14071) which was part of the Federal Violent Crime Control and Law Enforcement Act of 1994. This



law became enacted in Pennsylvania in 1994. This act mandated that sexual offenders register with the state and local law enforcement upon release from prison. The information about offenders on the registry was for law enforcement purposes only. It was not available to the public. The law required offenders convicted of certain acts that deemed them a predator to have lifelong tenure on the registry. States that failed to comply with the federally mandated Jacob Wetterling Act would not receive ten percent of the federal funds that were available annually under the Omnibus Crime Control and Safe Streets Act of 1968.

The Jacob Wetterling Act was amended by the United States Congress in 1996 with the passage of Megan's Law, as well as with the Pam Lyncher Sexual Offender Tracking and Identification Act. Megan's Law, like the Wetterling Act, required all states to have a registry of sex offenders. However, it also required a notification system, which consisted of either the police or the offender notifying community members of a sex offender's presence in the neighborhood. The Pam Lyncher Act enhanced the Wetterling Act with the creation of a national sex offender registry in which jurisdictions across the United States would share sex offender information with the Federal Bureau of Investigation (FBI). In jurisdictions where there was not a sufficient registry, offenders would register directly with the FBI.

In Pennsylvania, Megan's Law was enacted with the passage of Act 24 in 1995. The law went into effect April 21, 1996 and allowed for the court to categorize offenders as sexually violent predators and sentence them to life imprisonment. The law also mandated that those convicted of sexual or violent offenses (as constituted by the law) register with the Pennsylvania State Police. Finally, Megan's Law required that sexually violent predators notify community members of their presence and their crime upon moving into a neighborhood.

Portions of Megan's Law were found to be unconstitutional in a ruling of the Pennsylvania Superior Court (*Appellee v. Edward James Hale, 1998*). The Pennsylvania Supreme Court, in a dissenting opinion on June 30, 1999, ruled that all provisions of the act with regards to sexually violent predators were unconstitutional (*Commonwealth v. Williams*). However, also in a June 30, 1999 ruling, the Pennsylvania Supreme Court ruled that the registration portion of the act was constitutional (*Commonwealth v. Gaffney*). The law was reenacted on May 10, 2000 by Act 18 and became effective July 8, 2000. However, during this time the registry and notification was maintained.

Since its enactment, Pennsylvania's Megan's Law has been continuously amended, but a particularly important amendment was Senate bill number 92 on November 24, 2004, in which all information regarding sex offenders on the registry would be made available to the public via the Internet (42 Pa. C.S.A. § 9798.1). This revolutionized the widespread availability of sex offender information. In addition, new crimes were included for which registration and notification were required. These included luring a child into a vehicle and institutional sexual assault.

### **Purpose of the study**

#### **Research Intent**

The intent of this research was to assess the effectiveness of Megan's Law in the state of Pennsylvania. This was achieved through examining the change in crime rates that was seen as a result of two iterations of Megan's Law that were passed, the original and the revised version. The current study utilized both annual and monthly Pennsylvania Uniform Crime Report data. Megan's Law, at its original implementation in 1996, required sex offenders who met registration requirements to inform law enforcement of their address and to notify the

community members in the neighborhood in which they inhabited. It was intended to serve as a prevention tool and crime solving aide. Megan's Law was subsequently changed November 24, 2004, at which time the registry was made public through the use of the Internet as a medium for dispersal of information. The revision of the Megan's Law furthers the goal of the law as preventing future sex crimes.

The current study examined crime rates of urban areas versus suburban/rural areas, so that a larger picture may be painted as to what effect Megan's Law had on sex crimes in the state of Pennsylvania. Past research has not added this component, but only looked at the effect that registration and notification laws have had on statewide rates (Sandler et al., 2008; Vasquez et al., 2008; Letourneau et al., 2010). It was suggested, however, by Vasquez et al. (2008) that the effectiveness of Megan's Law be examined on a smaller level. This current study adds to the existing literature by providing a new and different examination of what effect the implementation of this law had on crime rates in urban versus suburban areas.

This study examined whether Megan's Law was successful in reducing crimes that require registration in Pennsylvania. A variety of different sexual crimes currently are registerable offenses. Past research, had only examined typically one or two targeted crimes (rape and sex offenses) in assessing the effectiveness of Megan's Law. However, the current study examined multiple crimes. These crimes include: rape for both urban and rural areas; rape of an individual under the age of 18; rape of an individual over the age of 18; murder of an individual 14 and under; urban and suburban/rural sex offenses. The inclusion of these dependent variables is in part due to inefficiencies in past research. Vasquez et al., (2008) and Sandler et al. (2008) used solely forcible rape as a dependent variable to determine the deterrent effect of Megan's Law on state wide crime rates. Letourneau et al. (2010) used the solitary

dependent variable sex crimes. The additional variables are being included, as well as disaggregated by age, as a way to expand upon past research because such variables had not been included in previous studies, which has raised questions about the efficacy of the outcome measures used to operationalize effectiveness.

In the past, researchers have examined the personal characteristics of sex offenders on the registry (Sample and Bray, 2006; Walker & Ervin-McLarty 2000) as well as explored public and law enforcement personnel's beliefs and opinions about the success of the laws (Levitz and Farkas, 2001; Matson and Lieb, 1996; Philips, 1998). There has been additional research on the recidivism rates of registered sex offenders as a way to judge effectiveness using official data sources as well as records from rehabilitation programs (Petrosino and Petrosino, 1999; Schram and Milloy, 1995). There have been only a few pieces of research (Letourneau et al., 2010; Sandler et al., 2008; Vasquez et al., 2008) to directly address the efficacy of sex offender registration and notification laws through the use of an interrupted time series design (ITS).

Supplementary ITS research that utilizes variables in addition to forcible rape is needed in order to judge the true effectiveness of Megan's Law. This is a result of the fact that there are many different types of sex offenses that require registration and notification under Megan's Law. The use of forcible rape as an exclusive single dependent variable in past research (Vasquez et al., 2008 and Sandler et al., 2008) or sex crimes (Letourneau et al., 2010) does not capture the range of offenses. Therefore, the effectiveness of the law cannot be fully gauged. It is also believed by the author that the goal of Megan's Law was to reduce other crimes and not exclusively rape.

### **General Design: Interrupted Time-Series (ITS)**

In order to study the effectiveness of Megan's Law in the state of Pennsylvania, an interrupted time series (ITS) design was utilized. This type of design is an effective tool in assessing existing laws. Examining many observations on the same variables over time allows for an impact assessment of a law to be made (Shadish, Cook and Campbell, 2002). In the current study, a series of observations was made on the same dependent variables: Urban and suburban/rural rape; rape of an individual under the age of 18; rape of an individual over the age of 18; urban and suburban/rural sex offenses; murder of an individual 14 and under. Also included are nonequivalent dependent variables: urban and suburban/rural robbery; urban and suburban/rural assault; murder of an individual 15 and over; urban and suburban/rural murder. All variables were examined continuously over time, both pre and post Megan's Law original implementation (April 21, 1996) and its subsequent revision (November 24, 2004). This allowed for an assessment to be made of the impact/effectiveness of Megan's Law in reducing crime rates.

Data from the Pennsylvania Uniform Crime Report was utilized from 1974 to 2010 for the data analysis. The UCR can be disaggregated by month beginning with the year 2001. Prior to 2001, the data exists only in yearly form. There were two data sets utilized: an annual data set, which included the years 1974-2009 and a monthly data set with the years 2001-2010. The first data set was used to analyze the effect of the original version of Megan's Law (April 21, 1996) on crime rates in Pennsylvania. There were 22 pre-treatment yearly observations for the initial implementation and 13 years post treatment. Although, one hundred total observations are considered to be desirable for use in time series projects, a lesser number of observations may be used and models can still be adequately identified (Shadish et al., 2002). For the second data

set, which includes monthly data, the effect of the subsequent revision of Megan's law on November 24, 2004, in which all information regarding registered sex offenders would be made available to the public via the Internet (42 Pa. C.S.A. § 9798) was analyzed. There were 47 monthly pre-treatment data points 73 monthly post-treatment observations. The number of pre and post-treatment observations for the study ensures that there are a sufficient number of observations for the use of ARIMA modeling.

In order to assess the effectiveness of the law from the data obtained, Autoregressive Integrated Moving Average (ARIMA) modeling and also Ordinary Least Squares regression were used. However, ARIMA served as the primary analysis method. Most standard statistics assume that observations are independent of one another. However, this is rarely the case regarding data that are used in times series designs. The data used in these types of designs suffer from autocorrelation, which is the value at one observation point is likely to be correlated with the value at one or multiple other observation points. Most variables in the study did suffer from autocorrelation, and therefore the results using Ordinary Least Squares for data analysis would have not fully identified the relationship. ARIMA modeling allowed for analysis of the data points without the problems that would have been seen pertaining to autocorrelation in OLS or other statistics (Shadish et al., 2002). In this study, the variables that did not display autocorrelation were run using OLS regression.

### **Theoretical underpinnings**

#### **Incorporating two theories to explain the purpose of Megan's Law**

The purpose of Megan's law is to reduce sex crimes through preventive measures such as community notification and a sex offender registry. The goal of this law is to create awareness among community members in order to prevent sexual offenses from occurring. The intent of

Megan's law is to reduce ignorance in the community regarding a sex offender's presence in the neighborhood (Vasquez et al., 2008). Megan's Law, like other sex offender legislation, is also based upon the assumption that sex offenders released into the community will recidivate (Sample and Bray, 2003) ) which means that people living in the neighborhood of a sex offender need to be informed. As a result of the preventive intent of Megan's Law and the assumption of recidivism, routine activities theory (Cohen and Felson, 1979) and rational choice theory (Cornish and Clarke, 1986) are arguably the two most appropriate criminological theories to apply. Applying two theories to explain the purpose and the effectiveness of Megan's Law is fitting because there is no one theory that explains the etiology of sexual offenses (Robertiello and Terry, 2007) and individuals on the registry are not a homogenous population. There are many different types of sex offenders on the registry (Sample and Bray, 2006) and utilizing one theory may not provide a satisfactory explanation to assess the purpose and effectiveness of Megan's Law.

In the past, these theories have been applied separately to the crimes of sex offenders. Criminologists have applied rational choice to sex offenders arguing that sex crimes, particularly those against children, are a result of a rational decision making process by the offender who weighs the cost and benefits before deciding to commit a crime. As a result, the only way to prevent crimes of this nature is to block the opportunity to commit crime (John Jay College, 2004; 2006; Leclerc, Beauregard and Proulx, 2008; Marshall, Serran & Marshall, 2006; Terry and Ackerman, 2008; Wortley and Smallbone, 2006) Routine activities theory has not been applied exclusively as explanation for sex offenses. Routine activities theory was tested in conjunction with attachment to family and peers. This was done in order to determine the effect the level of attachment had on structuring daily routines and the incident of violent

victimizations against children (Schreck and Fisher, 2004). Although rational choice theory (Cornish and Clarke, 1986) has dominated the literature regarding Megan's Law, routine activities theory it is also considerably applicable based on the intent of the law. Through the implementation of community notification and registries, Megan's Law is trying to remove the convergence of the suitable target and motivated offender, while providing a capable guardian.

Applying both rational choice theory (Cornish and Clarke, 1986) and routine activities theory (Cohen and Felson, 1979) in examining the effectiveness of Megan's Law should provide for a comprehensive framework within which to interpret the data/results obtained. Relating rational choice theory (Cornish and Clarke, 1986) to Megan's Law assumes there is an offender who considers his or her choices and their outcomes as a result of the situation at hand.

Incorporating routine activities theory (Cohen and Felson, 1979) in interpreting the impact of Megan's Law adds additional strength because it explicates the situation in which the offender finds him or herself. The potential preventive/deterrent effect of removing potential victims from the environment of the offender and/or the heightened vigilance of possible guardians fit well within the routine activities theory framework laid out by Cohen and Felson (1979). The application of both these theories to Megan's Law illustrates the intent of Megan's Law as situational crime prevention.



## CHAPTER II

### AN EXAMINATION OF THE HISTORY AND EMPIRICAL RESEARCH

#### **Introduction**

Over the years, the U.S government has spent millions of tax dollars in efforts to protect children from a wide range of risk and dangers. The federal government's most recent initiative is to safeguard children from violent sexual predators through the use of community notification and registration laws (Radford, 2006), such as Megan's Law. The main purpose of Megan's Law is to protect individuals from sex offenders who reside in their own neighborhood. The belief is that if citizens are aware of an offenders' presence in their community, they can take precautions to avoid the offender and victimizations. Megan's Law also has a deterrent component which lends itself to its prescribed purpose (Vasquez, Maddan and Walker, 2008). If an offender knows that community members are aware of their presence, they may be unlikely to commit crime for fear of getting caught. Given its focus and purpose and also given its prescribed policies and practices, Megan's Law has received a great deal of attention from the public, politicians and the media making it a current point of debate and controversy.

This chapter addresses two key areas relating to Megan's Law. First, the history of Megan's Law is presented, beginning with events prior to passage of the law and continuing through the present with amendments to the law. The history is addressed because the implementation of Megan's Law was influenced by incidents which have built upon one another and continue to do so with current sex offender legislation. Such laws do not occur in a vacuum, there are occurrences within the United States that have led us to the point we are at today with sex offender legislation and it is important to know how we got here.

Second, the empirical research conducted on Megan's Law and sex offender registration and notification will be offered. There have been process evaluations conducted on the implementation of Megan's Law (Matson and Lieb, 1996; Tewksbury, 2002) and stakeholder perceptions of the law (Phillips, 1998; Reidlich, 2001; Zevitz and Farkas, 2000a). This research will be assessed in this section. However, the focus of this literature review will be past research which has examined the efficacy of Megan's Law.

### **The history of Megan's Law; A long and winding road**

Megan's Law is a topic which spurs much controversy and stirs many emotions. It has been part of this country's history for almost two decades, but the underlying idea behind it is nothing new. Legislators have been trying to control and regulate sex offenders since as early as 1920 (Lieb, 1996). A series of high profile crimes led to sexual psychopath laws being passed nationwide in the 1930s and 1940s. Specifically, the sexual attack and murder of four little girls in New York and two girls in Indiana, followed by a frenzy of media attention to the cases, incited laws to be passed shortly thereafter (Sutherland, 1950). Sutherland (1950) concludes that these isolated incidents and the panic that ensued was what led, at least in part, to the implementation of the sexual psychopath laws. These laws made it acceptable for sex offenders who were deemed sexual psychopaths to be committed to mental institutions indefinitely, only to be released if treatment was successful. Sexual psychopaths were sex offenders who were unable to control their impulses and who were thought to commit the same crimes, whether it be against children or adults, again and again regardless of the types of punishment they received.

The sexual psychopath laws of the 1930s and 1940s parallel Megan's Law because of the fact that they largely addressed crimes committed against children. These laws were also passed as a reaction to widely publicized cases involving child victims (Sutherland, 1950). However,

there were other sex crimes encompassed within these laws, as is the case with current legislation. Crimes involving adult victims also fell under the sexual psychopath legislation. The sexual psychopath laws, like Megan's Law, assumed that there was homogeneity among all sex offenders. The laws were based on the notion that individuals who committed a sex crime, regardless of the type of offense, would recidivate at the same rate. Past sexual psychopath laws, like Megan's Law, were passed in an effort to control a small, dangerous population of offenders and prevent crime. However, more and more offenders eventually became subjected to the law than was originally intended. This historical observation is important, as expanding a law's coverage may ultimately have a bearing on the effectiveness of the law. Many sexual psychopath laws were abolished in the 1960s and 1970s as skepticism grew regarding the effectiveness of treatment and rehabilitation and more emphasis was put on using the criminal justice system to punish sex offenders (Janus and Walbeck, 2000; Lieb and Matson, 1998). Sample and Bray (2006) suggest that the discontinuation of these laws could be part of the reason that there was a reintroduction of similar laws in the 1990s. If laws which regulated sex dangerous offenders were already in place, Megan's Law and other subsequent laws may not have been passed.

Panic over missing children, child abduction and child sexual abuse began to erupt in the United States in the 1980s, and sent a wave of fear through the nation (Hechler, 1988; Jenkins, 1998; Kappeler and Potter, 2005). The media engaged people's fears with many television shows, news reports, public service announcements, flyers and missing children's faces on milk cartons (Kappeler and Potter, 2005). The fear and hysteria of this decade arguably was a major influence for much legislation that followed, such as Megan's Law. The abduction of eleven year old Jacob Wetterling by an unidentified male at gunpoint in October 1989 solidified the

trepidation of the public regarding child victimizations and abductions. The case was highly publicized by media. The fear that people already felt increased as a result of the fact that there were few suspects, no arrests and that Jacob was never found.

In addition to the fear which swept the nation, many citizens as well as Jacob's parents became extremely outraged after the discovery of a half way house near Jacob's home that housed sex offenders recently released from prison (Levenson and D'Amora, 2007). Jacob's parents and many other concerned parents began to advocate laws that would be more effective in the prevention of abductions and recovery of missing children. The result was the 1994 Jacob Wetterling Crimes Against Children and Sexually Violent Predator Act (42 U.S.C. 14071), the precursor to Megan's Law. This act required that each state enact laws requiring sex offenders to register their name and address with their local police. Information regarding the sex offenders on the registry was for law enforcement purposes only. The public did not have access to this information. An offender was to remain on the registry for ten years after being released from prison. However, those offenders who were classified as serious offenders, highly likely to recidivate or sexually violent predators, were required to be on the registry for life. States were provided with a financial incentive by the federal government to comply with this law (Bureau of Justice Assistance, 2008).

The passing of the Jacob Wetterling Act seemed to quell the fears of the nation temporarily, but the effect was short lived. In July 1994, seven year old Megan Kanka was sexually assaulted and then strangled by a convicted sex offender living on her street. The case became a national media event. Megan's parents and a group of concerned citizens began to campaign for a law that would mandate community residents be notified if a sex offender moved into their area. New Jersey was the first state to pass Megan's Law in 1995 (Lotke, 1997).

Megan's Law was passed at the federal level in 1996. It enhanced the Jacob Wetterling Act. Law enforcement was now required not only to maintain a registry of sex offenders, but also to inform citizens of the presence of a sex offender in their neighborhood. The federal version of Megan's Law does not specify how law enforcement notifies the public. The degree of community notification varies depending upon the community's needs (Finn, 1997). Notification could be achieved through active notification, such as flyers, community meetings or media advertisement. Notification could also be done through more passive means such as having the registry available for public view in the police department (Levenson, 2003). Megan's Law signaled a change in criminal justice policy. Law enforcement was now not only responsible for apprehending criminals and fighting crime, they had to be proactive in the community, taking a greater hand in public safety and sex crime prevention (Proctor, Badzinski and Johnson, 2002).

Although Megan's Law was the first federal law which mandated sex offender registration and notification, some states had a law that required sex offender registration and notification prior to the implementation of Megan's Law. California passed a sex offender registration law in 1947, requiring convicted sex offenders to register with law enforcement (California Office of the Attorney General, 2002). In 1990 Washington State was the first to pass a sex offender notification law in conjunction with the registration requirement (Matson and Lieb, 1996). Pennsylvania, which is the focus of the current research, passed its own version of Megan's Law in 1995 and it was implemented in 1996.

Although most states had a version of Megan's Law put into action either prior to the passage of Megan's Law or shortly after, the government penalized states if they failed to implement their own version of Megan's Law. If within three years after the passage of the federal law, a state's law enforcement agencies did not have a registry to track sex offenders and

was not participating in some form of notification, they would face losing ten percent of the federal anti-drug grant that they received. As a result of the rising public concern and the fear of losing government funding, every state eventually passed a sex offender registration and notification law (Center for Sex Offender Management, 1997), making Megan's Law fully ingrained into the criminal justice system.

After the passage of Megan's Law, the Pam Lyncher Act 42 (U.S.C. 14071) was also passed in 1996. This law was named in the honor of Pam Lyncher who before dying in a plane crash, was raped twice by a convicted felon. This law enhances Megan's Law by its establishment of a national sex offender registry. This allowed sex offenders to be tracked nationwide and for information sharing among many law enforcement agencies, including the Federal Bureau of Investigation (FBI), which maintains the registry of released sex offenders (Tewksbury and Lees, 2006)

The implementation of Megan's Law and the subsequent passage of the Pam Lyncher Act may have eased the fears of some, but it raised questions and concerns among others. The constitutionality of Megan's Law was challenged in Pennsylvania courts, as well as in the Supreme Court of the United States. The constitutionality of Megan's Law was challenged in 1998 in Pennsylvania and parts of the law were found to be unconstitutional by the ruling of a Pennsylvania Superior Court (*Appelle v. Edward James Hale, 1998*). The ruling was subsequently overturned by the Pennsylvania Supreme Court (*Commonwealth v. Gaffney, 1999*) in 1999 in which Megan's Law was found to be constitutional. As a result of this ruling, Pennsylvania reenacted Megan's Law with the passing of Act 18 in 2000. There is no indication that the enforcement and implementation of Megan's Law changed during this time period. In

addition, Act 113, also passed in 2000, amended Act 18 with the addition of a new offense to the registry, sexual exploitation of children.

In 2003, the constitutionality of Megan's Law was argued before the Supreme Court of the United States in two cases. The first case, *Connecticut Department of Public Safety v. Doe*, asserted that Megan's Law violated an individual's right to due process which is guaranteed by the Fourteenth Amendment of the Constitution. The Supreme Court held that Megan's Law is not a violation of due process and that due process was given in the trial and the conviction of the offender. In the second case, *Smith v. Doe*, the constitutionality of Alaska's version of Megan's Law was challenged. The defendants, who were both convicted sex offenders, argued that since they had been convicted and met the requirements of their sentence before Megan's Law was enacted, they should not be subjected to it. The Supreme Court ruled that since Megan's Law is a regulatory law and not a law designed to additionally punish sex offenders, the offenders were not being subjected to ex post facto punishment and therefore must register. These Supreme Court rulings firmly asserted Megan's Law into the public policy of U.S (Welchans, 2005).

After the Supreme Court rulings, the 2003 PROTECT amendment further modified Megan's Law by requiring state law enforcement agencies to develop and maintain Internet registries containing information on sex offenders (Prosecutorial Remedies and Other Tools to End the Exploitation of Children Act, 2003). The PROTECT amendment also expanded the use of amber alerts so that citizens can be aware of missing children and their abductors. States began to take a step beyond the PROTECT act and mandate that the sex offender database be accessible to the public. Pennsylvania achieved this through Senate Bill Number 92, which was passed in November 24, 2004. This created an internet registration and notification system. It

also added two new crimes to the registry: Luring a Child into a Motor Vehicle (18 Pa. C.S. § 2910) and Institutional Sexual Assault (18 Pa. C.S. § 3124.2).

The federal government expanded the availability of the registry with the Adam Walsh Child Safety and Protection Act of 2006 (H.R. 4472). This act augmented Megan's Law, making information on offenders available nationwide via the Internet. This law created harsher sentences for sex crimes committed against children and also enhances the ability of states to institutionalize offenders who are about to be released from prison but who are likely to recidivate because they were not able to modify their behavior in prison. In addition, this law created funds for a task force to fight crimes of child exploitation on the Internet. It also requires stringent requirements for background checks for foster and adopted parents and the creation of a child abuse registry (The Adam Walsh Child Safety and Protection Act, H.R. 4472).

The progression of community notification and registration laws has arguably been controversial since their earliest forms in the 1930s and 1940s. However, the continually heightened media attention to high profile cases, the moral panic felt among the general public and the overall support for these laws means that it is likely that such laws are to be a permanent part of United States public policy regarding sex offenders. Although these laws may appear to be an enduring fixture in criminal justice policy and please the masses, more empirical research on sex offender registration and notification laws should be conducted to determine if these laws are having the desired effect in preventing and reducing crime, as well as deterring offenders.

### **Megan's Law; Process and Stakeholder evaluations**

The effectiveness of community notification and registration laws in the United States is not entirely known, as research in this area has been generally sparse (Zevitz and Farkas, 2000a). A few studies have researched the efficacy of Megan's Law (Petrosino and Petrosino, 1999;



Sample and Bray, 2006; Schram and Milloy; 1995; Vasquez et al., 2008) which will be detailed in a later section, but the majority of research conducted does not focus on the effectiveness of these laws. Rather, Megan's Law has principally been examined using process evaluations (Matson and Lieb, 1996; Tewksbury, 2002) and stake holder evaluations (Elbogen, Patry and Scalora, 2003; Fortney and Baker, 2010; Levenson and Cotter, 2005; Lieb, and Nunlist, 2008; Malesky and Keim, 2001; Mercado, Alvarez and Levenson, 2008; Reidlich, 2001; Younglove and Vitello; 2003; Zevitz and Farkas, 2000b; Zevitz and Farkas, 2000c;). Both of these approaches have provided information on the implementation of Megan's Law and the reaction that various groups have had to the law. However, neither has provided evidence that Megan's Law is either effective or ineffective. In this section, an overview will be presented regarding the research conducted on process and stakeholder evaluations.

Megan's Law, and earlier variations of sex offender registration and notification laws, has been researched through process evaluations which have monitored the progression of implementing the law and examined the ways it is executed in the day to day workings of the criminal justice system. The principal actors who are responsible for implementing Megan's Law registration and monitoring the notification requirement is law enforcement. Matson and Lieb (1996) assessed ways in which law enforcement was implementing the registration and community notification that was mandated by Washington State's Community Protect Act, which was passed in 1990. This act was passed prior to Megan's Law and was the first in the country to initiate the monitoring of sex offenders and also provide notification of their whereabouts to the community through law enforcement. In their research, Matson and Lieb (1996) examined how sex offenders were categorized for eligibility for the registry, as well as how they were monitored by law enforcement. They discovered that the most common means to

notify residents of a sex offender's presence in the community was through a media release, followed by door-to door flyers, community meetings and finally by mailed flyers. Law enforcement officers were also interviewed to determine advantages and disadvantages to the implementation of this law. Some of the advantages include the promotion of community awareness and surveillance, child safety, and the possible deterrence of future crimes. Officers reported that the extra workload that they had to bear, difficulties obtaining information from the court system and other law enforcement agencies, as well as dealing with the overreaction from the public were all disadvantages to the implantation of the law (Matson and Lieb, 1996).

The second process evaluation to be conducted was by Tewksbury (2002), who assessed a different aspect of Megan's Law than Matson and Lieb (1996). Tewksbury (2002) examined the accuracy of the implementation of the Internet-based sex offender registry in Kentucky. Most sex offender registries are online and allow citizens to readily access information about offenders. The results of this research indicate that there may be problems with the online registry. Tewksbury (2002) discovered that only about half of all offenders profiles contained in the registries had a photo. This makes it difficult for community members to identify a sexual predator and hindering the preventative potential of Megan's Law.

In addition to missing profile photos, there were other problems discovered with the registry. Tewksbury (2002) estimated that about 75% of the addresses listed for registered sex offenders were correct addresses. The rest of the home addresses listed on the registry were empty lots, businesses or false addresses. However, even the estimate that 75% of the addresses listed on the Internet registry were correct may be inaccurate. Tewksbury (2002) did not actually verify if the sex offender who reported living there did indeed reside there. This fact indicates

that Tewksbury's original 75% accuracy estimate may well be an overestimate (Welchans, 2005).

Process evaluations have provided information regarding the implementation of Megan's Law. In addition, research has also been conducted which has examined the opinions and beliefs of stakeholders regarding community notification and registration laws. Stakeholders have been conceptualized by researchers to include the sex offenders who are subject to the law, treatment professionals and community members. Again, as is the case with process evaluations, this research did not measure effectiveness of these types of laws, but rather the effect the law had on the population sampled.

Sex offenders are viewed as a stakeholder because they are affected more than any other party as a result of Megan's Law. Research which has examined the opinions and experiences of sex offenders who are subject to registration and notification has found that sex offenders are often unaware of the registry requirements and the guidelines set forth by Megan's Law (Elbogen, Patry and Scalora, 2003) and offenders have reported they were not concerned about the registry (Zevitz and Farkas, 2000b). However, offenders did express some concern about embarrassment (Elbogen et al., 2003; Levenson and Cotter, 2005) and reported that the registry did negatively affect their personal relationships, as well as employment and residential prospects (Zevitz and Farkas, 2000b; Levenson and Cotter, 2005; Tewksbury, 2005; Mercado, Alvarez and Levenson, 2008). Sex offenders also have reported experiencing significant amounts of stress, depression and hopelessness as a collateral consequence of the registration requirement (Levenson and Cotter, 2005; Mercado, Alvarez and Levenson, 2008; Tewksbury and Lees, 2006). Vigilantism and/or harassment was not found to be a major problem in some empirical

studies (Elbogen et al., 2003; Zevitz and Farkas, 2000b), while others (Mercado et al., 2008; Tewksbury, 2005) found that registered sex offenders experienced harassment.

Treatment professionals and law enforcement are also stakeholders who are affected by Megan's Law. Law enforcement has been found to support community notification and registration laws (Matson and Lieb, 1996; Redlich, 2001), but do report an increased workload associated with the implementation of such laws (Matson and Lieb, 1996). Similar findings have been shown for probation and parole officers. They support the law, but also report that its implementation has meant more daily responsibilities and an increased case load. Many probation and parole officers have reported that the most challenging aspects of the passage of such laws is finding housing for registered offenders (Zevitz and Farkas, 2000c) and managing the increase in offenders requiring supervision (Matson and Lieb, 1996).

Therapists who work with sex offenders have a different view of sex offender registration and notification laws. In their survey of randomly selected members of the Association for the Treatment of Sexual Abusers (ATSA), Malesky and Kim (2001) found that most do not support these laws. Over 80% of those surveyed reported that they believe that registration and notification will have no effect on the number of children who are sexually abused each year. A majority of those surveyed also reported that they believed that putting a sex offender's information and photograph on a website would not assist in deterring that individual from committing subsequent sexual offenses. Malesky and Kim (2001) also discovered through their research that most of the therapists surveyed felt that sex offender registration and community notification could create a false sense of security for parents making them less concerned about protecting their children from sexual offenders not listed on the registry.

Levenson, Fortney and Baker (2010) examined the perceptions of professionals working in the field of sexual abuse regarding the perceived effectiveness of sex crime legislation. The researchers employed a nonrandom convenience sample surveying individuals who were in attendance of selected sexual abuse conferences in Florida, Indianapolis and Boston during the summer of 2007. Participants were asked Likert-type scale and forced answer questions pertaining to current sex offender policies. Many participants (62%) indicated that they believed the current sex crime legislation was fair and 42% agreed with the registration and notification laws in their states. However, only a few (5%) reported that these laws were effective or very effective (3%) in reducing the number of sex offenses committed. Over half of the participants in the study indicated they would support sex offender legislation even if there was no scientific evidence to support its effectiveness.

In addition, Levenson, Fortney and Baker (2010) found that there was not a significant difference in support for sex offender notification laws between respondents who worked with sex offenders and those who worked with victims. However, participants who worked with offenders did have differing attitudes from those who worked with victims regarding the laws restricting housing of registered sex offenders. Professionals who worked with offenders believe that a law which restricts the residence of sex offenders increases chances for recidivism. In general, those individuals who did not directly work with sex offenders had a more positive view of sex offender legislation. Researchers found that age and education level was also a factor. The younger and/or more educated the respondent, the less fear they reported regarding victimization and the lesser amount of agreement with current laws. The younger and/or more educated respondent also reported a less frequent Internet searching for registered sex offenders in their community than those who were older and/or less educated.

Research has also been conducted on the views that citizens have of Megan's Law. Citizens are often seen as the primary stakeholder for such legislation because they are the group the law aims to protect. Citizens in the community who were surveyed about community notification and sex offender registration reported that they believed the laws to be important or worthwhile (Phillips, 1998; Reidlich, 2001 Zevitz and Farkas, 2000a), as well as a potentially effective strategy in reducing the number sex offenses committed (Levenson, Brannon, Fortney and Baker, 2007; Proctor, Badzinski and Johnson, 2002). Reidlich (2001) found that women citizens were more likely to be supportive of the law than men. Other studies in which citizens were the participants did not report a difference based on gender. However, this finding suggests that perhaps one may exist. Community members surveyed also reported that the implementation of the law increased their awareness of personal safety, making individuals more aware of their surroundings and individuals they come into contact with (Phillips, 1998).

Awareness or knowledge of sex offender registration and notification laws may be a contributing factor to whether an individual takes safety precautions. Proctor, Badzinski and Johnson (2002) in their survey of 345 Massachusetts residents via phone found that respondents lacked a general overall knowledge about the notification law's provisions. In the sample those who were exposed to media coverage of the law, had an increased knowledge in the specifics of the law as it pertained to Massachusetts. In a similar study, Lieb and Nunlist (2008) surveyed 643 Washington residents via telephone regarding their familiarity and opinion of sex offender registration and notification. The study revealed that many (81%) residents were familiar with the law and that 63% learned of the law through a media source such as television or radio. Most participants (78%) reported that they never felt safer as a result of the implementation of sex offender notification and registration.

Schiavone and Jeglic (2009) surveyed 115 community members from 15 states using an Internet based community based message board. A majority (58%) of respondents were familiar with the purpose of sex offender notification and registration laws. However, 32% of respondents surveyed reported that they were unfamiliar with Megan's Law and did not know what the purpose of the law was. Most respondents received their information regarding the law from television (44%), the Internet (38%) or the newspaper (29%). The bulk of participants (80%) felt that sex offender legislation was constitutional and 44.2% believe that it is effective in preventing future offending.

The preceding studies do not mention personal safety precautions taken by the respondents. However, if one couples the results these studies with that of Phillips (1998), it could support the notion that dissemination of information regarding sex offender legislation made available to the masses through media sources can influence the knowledge, opinions and potential actions of citizens. This could possibly lead to increased effectiveness of these types of laws.

In addition, findings have shown that the community meeting aspect which often accompanies Megan's Law implementation has been found to have a positive effect on citizens. In some jurisdictions, meetings are held by law enforcement to inform citizens of the presence of a sex offender in the neighborhood. Zevitz and Farkas (2000a) found that most (92%) of those surveyed who attended these meetings found it to be at least somewhat helpful. However, their research also discovered that as a result of the meeting, citizens were more concerned at a slightly higher rate (38%) than they were reassured (35%). Citizens reported that they did like knowing about the presence of a sex offender, but also that it created some unease.

Process and stakeholder evaluations have proved valuable in exploring the implementation of sex offender registries and notification laws. This research has illustrated how such laws have been put into practice in the daily workings of the criminal justice system through the examination of those who implement these laws, principally law enforcement (Matson and Lieb, 1996) and probation and parole officers (Zevitz and Farkas, 2000c). These evaluations have shown that in day-to-day operations they experience an increased work load and/or more responsibilities. This research has also shown the ways in which sex offender notification is handled, either through implementation on a personal, more interactive level, such as law enforcement informing citizens with community meetings or in person, usually door-to-door (Matson and Lieb, 1996) or through an Internet registry which citizens can access the information themselves (Tewksbury, 2002). This research has also provided the context for which stakeholders view the law and the opinions that stakeholders have regarding sex offender notification and registration (Elbogen et al., 2003; Malesky and Kim, 2001; Matson and Lieb, 1996; Redlich, 2001; Zevitz and Farkas, 2000b). However, process evaluations have not shown if Megan's Law has been effective in its prescribed goal of crime prevention and crime reduction. The subsequent section will provide an overview of the research which has attempted to measure the efficiency of Megan's Law.

### **Research examining the efficacy of Megan's Law**

Past research has measured the effectiveness of sex offender registration and notification in two principal ways. The first is through an examination of the recidivism rates of registered sex offenders (Petrosino and Petrosino, 1999; Sample and Bray, 2006; Schram and Milloy, 1995). The second is through an assessment of reported crime rates using time series analysis (Sandler, Freeman and Socia, 2008; Letourneau, Bandyopadhyay, Armstrong and Sinha, 2010



Vasquez et al., 2008). In this section, both of these approaches will be examined, followed by a brief critique of the methodological issues appearing in the research.

Research which has looked at the ability of sex offender registration and community notification legislation to reduce recidivism has found that it has had little effect on recidivism rates (Schram and Milloy 1995; Sample and Bray, 2006). In addition, sex offender registration and notification has not been shown to have much ability to lower arrest rates. Schram and Milloy (1995) found that there was not a significant difference in rearrest rates or new convictions for registered sex offenders versus similar offenders who were not subject to registration. The registration requirement appeared to not have any effect on those subject to it. In the sample, most (63%) of the new arrests for sex offenses occurred in the same jurisdiction in which the offender was required to notify the community, also indicating that the notification requirement was unsuccessful in deterring offenders. However, Schram and Milloy (1995) contend that sex offender registration and notification laws have influenced the time of the new arrest, arresting an offender sooner for a sex offense than in the past.

One of the main reasons that sex offender registration and notification laws may not be successful in preventing crime and reducing recidivism is the fact that the laws tend to lump together all types of sex offenders into one category and treat them as a homogeneous group. Sample and Bray (2006) argue that sex offenders are a heterogeneous group of offenders whose motivations and inclinations to commit crime vary. In an examination of arrest data, using Illinois Department of Correction data from 1990-1997 (N=161,296), Sample and Bray (2006) discovered that all sex offenders do not recidivate at the same rate and therefore may not be equally deterred by the registration and notification requirements of Megan's Law. Sex offenders have different offending patterns. Sample and Bray (2006) found that the majority of those who

were rearrested for the same offense within a five year period were not overwhelming large, with 5.8% of rapists rearrested for the same offense, 3.8% rearrested for child pornography charges and a little over 1% were rearrested for charges of Pedophilia (offenders who abuse pre-pubescent children) and Hebophilia (offenders who abuse post-pubescent children). Offenders were actually rearrested for different felony crimes at a higher rate than those in which they were originally incarcerated for, with 49.1% of those arrested for rape, 37.4% arrested for Hebophilia, 34.6% of those arrested for child pornography and 31.4% originally arrested for Pedophilia being arrested for new and different crimes. The fact that many offenders in the sample did not commit the same subsequent offense suggests that perhaps sex offenders do not specialize in one type of crime. Sample and Bray (2006) contend that a majority of sex offenders may in fact be compulsive criminals who will commit crime based on opportunity and desire as suggested by Gottfredson and Hirschi (1990).

Sex offender registration and notification laws are portrayed as principally trying to prevent stranger predatory crime, in which a stranger abducts and rapes and/or kills a child. Megan's Law is not portrayed by the media or policy makers as a law that is trying to prevent the crimes of intimates (Petrosino and Petrosino, 1999). Petrosino and Petrosino (1999) in their assessment of the preventive capabilities of Megan's Law, found that two-thirds of the offenses committed by registry eligible offenders were not committed against strangers, but against people known to the offender, such as family members or friends. Petrosino and Petrosino (1999) also examined the potential ability of the notification function of Megan's Law to prevent stranger predatory crimes by doing a case analysis of past crimes. The researchers assessed if the offender had been on the registry and notified the community at the time of their release, if the victim would have potentially known about the offender's presence. In order to determine this,

Petrosino and Petrosino (1999) looked at the distance between the offender's home and work and the victim's home. They concluded that in only four of twelve cases examined would it have been likely that the victim would have been informed of the offender's presence and there could have been potential to prevent the crime. In two other cases, they deemed the chances poor to moderate that the victim would have been informed of the offenders presence and the crime potentially prevented. However, even if the victims were informed of the offender's existence, the crime may not have been prevented. In order to prevent these crimes, the sex offender's presence would have to have been publicized by law enforcement or local media, and even if this were to have occurred, it cannot be accurately judged in the author's assessment if these things were to have occurred, if the crimes may have been prevented.

Laws such as Megan's Law, which require sex offenders to register with law enforcement and notify the community of their presence, are based in part on the notion that there is a high rate of sex offender recidivism. Research which has specifically examined sex offender registration notification law has shown that in general there is not an overwhelmingly high level of recidivism for registered sex offenders. Sample and Bray (2006) report that no category of sex offender in their sample had higher than a 10% rearrest rate for the same offense they were incarcerated for. Schram and Milloy (1995) also found that overall rates for recidivism were relatively low. In 54 months, 19% of the sample of registered sex offenders committed additional crimes and 22% of the comparison group of non-registered sex offenders. In addition, they reported that 42% of their sample was arrested for new offenses of any kind (including sex), but only 14% were arrested for new sexual offenses. Petrosino and Petrosino (1999) in their preventive assessment of the ability of Megan's Law to prevent crime discovered that 33% of those who would have been eligible for the registry committed new stranger-predatory offenses.

While there was still recidivism seen in the research examining the effectiveness of sex offender registration and notification, it was not as high as was originally anticipated by recidivism research (Schram and Milloy, 1995.) In interpreting these findings, however, we must be cognizant of the caveat of recidivism statistics is that they are based only on official data which indicates re-arrest, not actual offending. Registered sex offenders may reoffend, but their crimes may go undetected if they are not arrested for their acts.

Vasquez, Maddan and Walker (2008) evaluated the effectiveness of sex offender registration and notification. They did not assess recidivism rates of registered sex offenders, but examined if the deterrent component that stems from Megan's law notification requirement has the ability to reduce reported rape rates. Initially, the researchers wanted to include all fifty states in their analysis. However, this was not possible because some states lacked the data required for inclusion. The final sample consisted of ten states (Arkansas, California, Connecticut, Hawaii, Idaho, Nebraska, Nevada, Ohio, Oklahoma and West Virginia) all of which had sufficient data for sixty pre and sixty post observations required for the use of an interrupted time series design. These states also reported rape using a monthly format which was a requirement for inclusion in the study. Vasquez et al. (2008) used an interrupted time-series (ITS) design and utilized monthly Uniform Crime Report (UCR) rape data which was obtained directly from the Federal Bureau of Investigation (FBI).

The research of Vasquez et al. (2008) yielded mixed results as to whether Megan's Law was able to reduce the number of reported rapes in the ten states included in the sample. The examination revealed that there was no statistically significant change in the number of monthly reported rapes for six of the ten states (Arkansas, Connecticut, Nebraska, Nevada, Oklahoma, and West Virginia). Some states did experience a non-statistically significant increase in the

incident of reported rapes after sex offender registration and notification laws were passed.

While these states did not experience a statistically significant increase, reported rape rates for the state of California did increase at a statistically significant rate, with an average increase of forty-one rapes per month. These findings suggest that sex offender registration and notification laws did not deter individuals from committing acts of rape. This research also revealed that five of the ten states experienced a decrease in rape rates, with three states (Hawaii, Idaho and Ohio) showing a statistically significant decrease in incident of rape after the implementation of sex offender registration and notification laws. This provides evidence that perhaps these laws do deter potential sex offenders and prevent crime.

Vasquez et al. (2008) concluded that the findings of their research do not clearly indicate whether sex offender registration and notification laws prevent crime as a result of the fact that a majority (six) of the states in this study saw no statistically significant difference in the incident of reported rape either before or after the implementation of the law. Although a majority of the states in the sample did not experience a significant change in rape rates, four states did have a change, three states had a decrease and one had an increase. These findings suggest that it is possible that these laws can serve as a deterrent for sex offenders, but they also imply that they do not. Vasquez et al. (2008) propose that the reason for the increase in the number of reported rapes after the law was passed can be attributed to the amplified attention that is placed on sex offenders and sex offenses. Law enforcement may be more likely to discover the crimes of sex offenders because of the increased scrutiny that is placed upon them. The researchers also suggest that there may be competing outcomes which are responsible for the findings in their study. Vasquez et al. (2008) argue that there may actually be a reduction in the actual number of sex offenses, but a larger proportion of these crimes are being discovered by authorities as a

result of sex offender registration and notification laws. They conclude that if the results of the study are examined collectively, it would appear that these types of laws have a little deterrent effect on the incidence of rape. This indicates that these states' version of Megan's Law have not been able to effectively prevent crime.

In addition to the research done by Vasquez et al. (2008), Sandler et al. (2008) also examined the deterrent effect of sex offender registration and notification policies using an interrupted times series design. The researchers examined the difference in sex offense rates before and after the passage of New York's Sex Offender and Registration Act. They utilized data ten years prior to the passage of the act and 11 years post. Sandler et al. (2008) also included two non-sex offenses (aggravated assault and robbery) in their analysis, to assess whether there were any nonspecific factors which may have resulted from the passage of the act that affected violent offending in general. Their data source was offender criminal histories which came from the New York State Division of Criminal Justice Services. They included files of every offender who was arrested for a sex offense that warranted registration for the years 1986 to 2006.

Sandler et al. (2008) utilized a univariate Box-Jenkins interrupted integrated moving average (ARIMA) analyses to determine the effect of the offender registration and notification act. They found that the enactment of a sex offender registration and notification law in the state of New York had no significant impact on sexual offenses for either first time offenders or repeat offenders for the offenses of rape or child molestation. The only offense in which a significant difference was seen was for robbery, in which the number of robberies declined after the passage of the law. This study found that the implementation of the policy that required sex offenders to notify the community and for the state to maintain a registry of sex offenders was not successful

in reducing the number of sex offenses that were committed for the time period that was analyzed.

The most recent research conducted on the effectiveness of sex offender registration and notification laws was performed by Letourneau et al. (2010). They examined the general deterrent effect that the South Carolina sex offender registration and notification (SORN) policy has on adult sex crimes. Letourneau et al. (2010) used adult arrest data from the South Carolina computerized criminal history records (CCHR) database for male defendants who were age 18 or older who were arrested between January 1, 1990 and December 31, 2005. The arrest data included in this study indicated the charges that were filed at the initial arrest and not those that were eventually used for prosecution purposes for plea bargain or at trial. However, only one sex crime per defendant was used. If an individual had two sex crime arrests within the time period of the study, the earlier one was included and the latter excluded. In order to distinguish arrest events, a unique code was created for an offense. This allowed researchers to differentiate the arrest even included in the study from other offenses which may have been committed by the individual.

Letourneau et al. (2010) used the univariate Box-Jenkins interrupted autoregressive integrated moving average (ARIMA) technique in order to assess the effect of the SORN policy which was originally enacted in 1995 and then amended in 1999 to include Internet-based registration of sex offenders. The researchers used six analyses. Three analyses were used to assess the effect of the 1995 intervention on sex crimes, assault and robbery and three were used to assess the effect of the 1999 intervention on these same offenses. The results indicate that there was an 11% reduction in the number of individuals who were charged with sex offenses during the post 1995 intervention period as opposed to the pre 1995 intervention period. This

was a difference of three arrests for sex offenses per month. The results for the intervention for sex crimes for the 1999 intervention were negative and nonsignificant, indicating a reduction in the number of sex crime arrests post the intervention.

The results of the research conducted by Letourneau et al. (2010) suggest that the South Carolina sex offender registration and notification policy was successful in having a general deterrent effect on first time sexual offenses. In order to verify that the reduction was due to the 1995 intervention and did not occur previously, the researchers fitted additional models. Models were fitted to the time series data for 1993 and 1994 as well. The 1993 model revealed no significance. The 1994 model was significant and it indicated a 9% reduction in sex offenses for the population post-1994 versus pre-1994. However, the researchers ran an additional model based on the notion that the findings for the 1994 model were a result of the strong negative effect of the 1995 intervention. In the added model, 1994 was fitted into a seasonal ramp component with a model coefficient and 1995 was also included as a true intervention with a step function and a model coefficient. This model revealed a nonsignificant finding. Thus, the researchers were able to conclude that the decrease in sex offenses that was seen could be attributed to the 1995 intervention.

In addition to examining sexual offenses, Letourneau et al. (2010) also looked at nonsex crimes (assault and robbery) for both a pre and post the implementation of the SORN policy in 1995 and the Internet registration amendment to the policy in 1999. The results indicate that for the assault there was no significant change in either the pre or post intervention period for either 1995 or 1999. The intervention results for robbery arrests in the 1995 reveal no statistically significant change. However, the results for the 1999 intervention show a 6% reduction in the rate of robbery arrests during the post intervention period.



The results of this study suggest that there may have been a deterrent effect for the initial implementation of the sex offender registration and notification policy. However, the results do not suggest that there was a general deterrent effect as a result of the change in policy that required Internet registration of sex offenders. Although a reduction of sexual offenses was seen in the research (Letourneau et al., 2010), there may be other explanations which could be attributed to these decreases. A limitation of time-series analysis research is that a change, whether it is an increase or a decrease in a trend, cannot always be attributed to a specific event. The cause of a change can be mysterious (Shadish, Cook and Campbell, 2002). South Carolina law enforcement may have viewed the SORN policy as too harsh and therefore may have made fewer arrests or labeled fewer crimes as sexual crimes, thus contributing to the decrease. Although research has indicated law enforcement did support the policy (Lawson and Savell, 2003). There also may have been fewer reports made by victims, which would have meant fewer arrests for law enforcement officers to make (Letourneau et al., 2010).

In addition, there are other explanations which could be used to account for the reduction on the number of sex crime arrests. There has been an increase in child abuse prevention programs over the past few decades, making these programs available to a larger number as well as segment of the population. Improved treatment for sex offenders could also have contributed to the decrease, as well as longer incarceration terms for those who commit certain sexual offenses. The policies and procedures of child protection agencies have made changes in recent years which also could result in less or more reports of sexual crimes depending upon the types of changes made by these agencies (Jones, Finkelhor and Kopiec, 2001).

## **Methodological issues in past research**

Previous research which has assessed the efficacy of sex offender registration and notification laws has provided some insight into the implementation of these laws, as well their potential effectiveness. However, much of this research has contained flaws, such as issues with validity, which have raise questions pertaining to the strength of the conclusions that can be drawn. In order to confidently state that a law is effective, the research conducted needs to be sound. Past research has contained problems with construct and internal validity, as well as conceptualization, operationalization.

A variety of validity issues exist in past research. Construct validity issues have been seen throughout the research, specifically, what Shadish, Cook and Campbell (2002) refer to as mono- method bias, mono-operation bias and inadequate explication of constructs. Past research which has examined the effectiveness of Megan's Law has primarily employed quantitative methods, resulting in mono-method bias. In solely using quantitative methods, researchers principally have examined official records, such as arrest (Schram and Milloy, 1995; Sample and Bray, 2006), conviction data, patrol reports and information from an offender based tracking system (Schram and Milloy, 1995), criminal history data of incarcerated individuals (Petrosino and Petrosino, 1999; Letourneau et al., 2010; Sandler et al., 2008), monthly state-level Uniform Crime Report data (Vasquez, Maddan and Walker, 2008) and arrest data (Letourneau et al., 2010) in order to deem effectiveness of legislation, resulting in mono-operation bias. The use of a strictly quantitative paradigm and subsequent operationalizations could potentially have an effect on research results and hence, the conclusions drawn. The inclusion of another type of paradigm could illuminate the ability of such legislation to meet its intended objective.

Incorporating a qualitative component to a quantitative study would allow the researcher to delve deeper into the area of inquiry and to view things from another perspective.

Another issue pertaining to construct validity that appears in past research is inadequate explication of constructs. This occurs when a researcher fails to define a construct or concept adequately and as a result, the measure used only partially conveys the meaning of the original concept the researcher intended to measure (Shadish et al., 2002). This is often an issue because most of what researchers want to measure in policy analysis is multi-dimensional. It can be difficult to obtain a full grasp on the phenomenon through certain types of measurement. Variables themselves may not be directly measurable and as a result proxy indicators are used (Marjchrzak, 1984). The inadequate explication of constructs can be avoided when using strictly quantitative means by securing a valid conceptual and operational definition.

A range of problems with conceptual and operational definitions have permeated past research. Researchers have not adequately explicated the constructs they are measuring or the ways in which they are measuring them. In the past, researchers have tried to measure the effectiveness of sex offender registration and notification by looking at recidivism rates (Petrosino and Petrosino, 1999; Sample and Bray, 2006; Schram and Milly, 1995) or reported crime rates (Vasquez, Maddan and Walker, 2008; Sandler et al., 2008; Letourneau et al., 2010), but both attempts have failed to capture the entire picture of effectiveness for this type of legislation. A reason that effectiveness has not been able to be determined may be a result of the fact that researchers have conceptualized and subsequently operationalized effectiveness inappropriately. Most past research has conceptualized effectiveness as lower recidivism rates and ineffectiveness as high recidivism rates (Petrosino and Petrosino, 1999; Sample and Bray, 2006; Schram and Milloy, 1995) or low aggregate official crime rates effectiveness of

legislation and high reported crime rates as ineffectiveness (Sandler et al., 2008; Letourneau et al., 2010; Vasquez, Maddan and Walker, 2008). In order to appropriately assess the effectiveness of sex offender registration and notification, there needs to be a clear conceptual definition of what is meant by the term “effective”, which is sufficiently reflected in subsequent operational definitions.

Researchers have operationalized effectiveness through the examination of recidivism rates of sex offenders for a small follow-up period (Petrosino and Petrosino, 1999; Sample and Bray, 2006; Schram and Milly, 1995) or examining one crime that warrants registration through an interrupted time series (Sandler et al., 2008; Letourneau et al., 2010; Vasquez, Maddan and Walker, 2008) does not provide enough information to determine if Megan’s Law is indeed effective. In order to better assess the efficacy of sex offender registration and notification laws, researchers need to conceptualize effectiveness in a different manner and then succinctly operationalize it. Examining recidivism of previous sex offenders does provide some insight, but does not illuminate the entire picture. Looking at aggregate crime rates (Letourneau et al., 2010; Vasquez, Maddan and Walker, 2008) is a step in the right direction, as it includes new crimes by individuals who may not have had prior involvement with the criminal justice system. However, the conceptualization of efficacy as low forcible rape rates (Vasquez, Maddan and Walker, 2008) or low sex offenses (Letourneau et al., 2010; Sandler et al., 2008) and the subsequent measurement of those rates does not allow for the true effectiveness of such laws to be known. This is a result of the fact that there are many more crimes an offender can commit which can warrant a registration and notification. The examination of only one crime does not show the entire efficacy of these laws. Multiple crimes need to be examined using an interrupted time

series design to control for issues in validity in order to know if this piece of legislation is indeed effective.

The current study builds upon past research and attempts to rectify some of the errors made in conceptualizing and operationalizing efficacy. Low rates of recidivism was not be used as a measure of effectiveness. Aggregate crime rates were used to measure effectiveness of Megan's Law. However, the rates of a variety of crimes which are included for registry and notification were examined in order to better assess the efficacy of Megan's Law to prevent and reduce crime.

In addition to construct validity issues, there have also been issues pertaining to internal validity. Foremost, most past research has been structured in a way in which it may not be possible to rule out other causes as a result of the selection of sampling design. Past studies (Petrosino and Petrosino, 1999; Sample and Bray, 2006; Schram and Milloy, 1995) have used traditional longitudinal designs, examining the official records of an offender over time. The exception is Vasquez et al. (2008), Sandler et al., (2008) and Letourneau et al., (2010), who utilized an interrupted time series design, which has the potential to increase the strength of conclusions drawn (Shadish, Cook and Campbell, 2002). However, there is a lack of controls for threats to internal validity seen in their research.

In past research, other possible factors which could have influenced recidivism and acted as a potential threat to internal validity were not taken into consideration. First, there is the potential for a history effect, in which a larger phenomenon occurred geographically in the areas of study or nationwide which could have influenced recidivism rates. While history is not discussed in past studies, it may have in fact been an issue or a contributing threat to validity.

The increased media attention that often surrounds Megan's Law or high profile cases which fall under this legislation could have an effect on the internal validity of a study.

A second threat to internal validity which is seen in most of the past research is ambiguous temporal precedence, in which it is unclear whether the cause preceded the effect in time (Shadish et al., 2002). Past research has examined whether sex offender registration and notification laws were able to be effective in reducing recidivism rates. However, these studies, with the exception of Vasquez et al. (2008), Sandler et al. (2008) and Letourneau et al. (2010), who utilized an interrupted time series design, did not assess enough data far enough back in time to accurately conclude whether the implementation of Megan's Law caused the change in crime rates, if one was seen. In order to more efficiently rule out other causes, researchers need to put controls in place to thwart threats to internal validity, as well as construct validity.

The preceding issues presented are only a few of which are present in the existing literature which has sought to examine the efficacy of sex offender notification and registration legislation. Perhaps some methodological problems in the past research could have been avoided if a different framework has been adopted. Research which seeks to assess the efficacy of a law should be guided, at least in part, by modes or methods of policy analysis. Past studies may not have employed essential policy analysis processes, which may have attributed to the problems that arose in the research. In order to better assess the effectiveness of Megan's Law, the current study aims to improve upon methodological weaknesses of past studies. One way in which this was done was by looking at the processes of policy analysis for guidance.

### **Process of policy analysis and researching law effectiveness**

A prominent application of policy analysis is the assessment of laws. Utilizing methods of analysis as a model in criminological research might aide researchers in more efficiently

studying the effectiveness of a piece of legislation because this process is geared specifically at assessing policy. It appears as a result of the problems with methodology, that the research which was presented in the literature review may have followed a policy analysis model in part or may have attempted to incorporate parts of this model, but was unsuccessful, as the research falls short in some areas. This research looked to the policy literature for additional guidance in developing a methodology for the assessment of Megan's Law. The explicit inclusion of policy analysis models may have assisted in improving the current research and preemptively correcting short comings that have occurred in past research.

Patton and Sawicki (1993) detail a process for analyzing policy, which has been widely applied and can be used to evaluate the effectiveness of a law. Patton and Sawicki (1993) argue that it is essential to specifically define and detail the problem, to know what the issue is or what it is you are trying to assess. This usually manifests itself into a conceptual definition. Past research which has assessed the efficacy of Megan's Law (Letourneau et al., 2010; Petrosino and Petrosino, 1999; Sample and Bray, 2006; Sandler et al., 2008; Schram and Milloy, 1995; Vasquez et al., 2008) have not provided clear conceptual definitions of effectiveness. The current research rectified this by specifically detailing and defining the problem or issue to be assessed in the research, as Patton and Sawicki (1993) suggest. The current research alsoe provided a clear, concise definition of all key concepts.

Establishing valid evaluation criteria is also a key component of policy research. Patton and Sawicki (1993) argue that in order to know whether a policy is successful, there must be solid criterion on which to judge it. Past research which has assessed the effectiveness of sex offender registration and notification laws have employed questionable evaluation criteria. In order to be know conclusively that a policy is working, it must first be evaluated with valid and

sound measures (Patton and Sawicki, 1993). Patton and Sawicki (1993) advise that not every method of evaluation is appropriate to evaluate every type of law, policy or issue. In examining the effectiveness of Megan's Law, past researchers may not have selected the most suitable methods of analysis, or at least may have neglected some. An interrupted time series design is arguably the best design to assess the effectiveness of a law over a long time period (McDowall, McCleary, Meidinger, and Hay, 1980; Ostrom, 1990; Shadish, et al., 2002), yet most past research did not utilize this mode of examination. In order to determine if a policy is effective, the best methods available should be used (Patton and Sawicki, 1993), which the current research utilized the best method available to assess Megan's Law, which is an interrupted time series design.

Policy analysis procedures, such as the one created by Patton and Sawicki (1995) are useful in determining the effectiveness of a law. Policy, in general is more complex because it is not made, but actually accumulated over time as a result of many different factors (Majchrzak, 1984). When examining the effectiveness of a policy, such as a specific law, many things need to be considered in constructing the research process to be used and the methods used to evaluate it (Marjchrzak, 1984; Patton and Sawicki, 1995; Quade, 1985;). There is no single method for doing technical analysis of policy research to determine findings, it depends upon the policy to be analyzed (Coleman, 1975).

While there is no one correct way, there are methods which lend themselves to more efficient assessments of a law efficacy. While the use of a simple longitudinal assessment, either prospective or retrospective, has been used previously, time series designs have been proven successful in the past. Quasi-experimental designs, principally, interrupted time series (ITS), are the most appropriate designs to use to examine the effectiveness of a law (McDowall, McCleary, Meidinger and Hay, 1980; Ostrom, 1990; Shadish, Cook and Campbell, 2002). These types of



designs are considered to be one of the strongest non-experimental designs for drawing casual inferences. Time series designs also have the potential to rule out a large number of alternative explanations. The use of monthly data in ITS designs permits greater flexibility and the application of more sophisticated and proficient statistical analysis procedures (Shadish et al., 2002). These types of methodologies have been employed in the discipline of Criminology and have been used to evaluate laws regulating different types of behaviors. Arguably, in order to assess the effectiveness of Megan's Law, an interrupted time series design needs to be utilized.

Interrupted time series designs have been used to assess public safety laws, such as three-strikes laws, gun control, drunk driving laws and riverboat gambling. These laws, like Megan's Law are concerned with increasing public safety. Three-strikes laws are trying to prevent additional crimes by incarcerating career criminals, who are thought to be committing a great deal of crime. These laws have been evaluated using an ITS design in order to determine if the crime rate has decreased since the implementation of three-strikes law (Stolzenberg and D'Alessio, 1997; Worrall, 2001; Ramirez and Crano, 2006).

Gun control laws and drunk driving laws, which are arguably the quintessential public safety laws, have also been assessed using an ITS design. Researchers have employed time series designs to determine if gun control laws have lowered suicide rates in Washington D.C (Loftin, McDowall, Wiersema and Cottey, 1991) and Canada (Carrington and Moyer, 1994). Webster, Vernick and Hepburn (2002) examined the effectiveness of a Maryland law which banned the use of a "Saturday night special" handgun to reduce homicide rates. O'Carroll, Loftin, Waller, McDowall, Bukoff, Scott, Mercy and Wiersema (1991) used an ITS design to determine the ability of Detroit gun ordinance to prevent homicide. In addition, drunk driving laws, which have the goal of preventing individuals from driving while intoxicated and therefore

increasing public safety, have been studied using ITS designs to determine if the implementation of the law has decreased the amount of alcohol related vehicular collisions (West, Hepworth, McCall and Reich, 2006). Time series designs have also been used to assess the effect of drinking age laws on vehicular crashes involving alcohol (Figlio, 1995).

The legalization of riverboat gambling is not a law that is thought to increase public safety as gun control and drunk driving laws do, but rather increase crime as a result of bringing a criminal element to an area. Data has been examined over time using an ITS design to determine the effect riverboat gambling (Wilson, 2001). In addition, other laws which have the goal of increasing public safety and reducing what could be considered a criminal element have also used interrupted time series. Reynolds, Seydlitz and Jenkins (2000) used a time series design to assess if juvenile curfew laws were effective in reducing crime in New Orleans.

Overall, time-series designs have been an effective method used in researching the efficacy of laws as a result of the strength in the design itself (McDowall, McCleary, Meidinger, and Hay, 1980; Ostrom, 1990; Shadish, Cook and Campbell, 2002). In order to properly research the effectiveness of sex offender registration and notification laws, a more in-depth time series analysis needed to be conducted which included more dependent variables and builds in controls for potential threats to validity, which the current study provides. In addition, the identification of weakness identified in past research and the inclusion of a model of policy analysis as another way to frame research on Megan's Law, also provides a sounder project.

## Chapter III

### THEORETICAL FRAMEWORK

#### **Introduction**

Deterrence theory has been the most dominant model used by law makers. Megan's Law, like most other laws, is based on deterrence theory, specifically rational choice. It is based upon the notion that a sex offender makes a rational, determined choice to commit a sex crime. In past analyses, rational choice theory (Cornish and Clarke, 1986) has been applied to sex offenses (Beauregard and Leclerc, 2007; Beauregard, Rossmo and Proulx, 2007; Leclerc, Proulx and McKibben, 2005; Leclerc, Beauregard and Proulx, 2008), although not specifically to Megan's Law. However, rational choice theory does not cover the full gamut of Megan's Law intent. In order to do that one must look to routine activities theory (Cohen and Felson, 1979). The implementation of the sex offender registration and notification through Megan's Law may serve as a deterrent for rational, decision making offenders, but it also aims to keep potential victims from offenders by informing citizens of an offender's whereabouts and keeping suitable targets away from motivated offenders.

In criminological research, routine activities theory has been applied to certain activities and crimes of sex offenders. However, it has not been applied specifically to the piece of legislation known as Megan's Law or incorporated as a theoretical explanation for many crimes covered under this legislation. The exception is that routine activities theory has been applied to child homicide (Boudreaux, Lord and Jarvis, 2001) and sexual murders of children and women (Beauregard, Stone, Proulx and Michaud, 2008). Although routine activities theory has not been applied to Megan's Law specifically, it is an appropriate theoretical framework from which to view Megan's Law and sex offenses more generally. This theory can offer an explanation for the

potential interaction of victims and offenders and crimes which may occur as a result of daily, routine interactions.

In this chapter, a variety of things will be accomplished. First, a brief theoretical background of both routine activities and rational choice theory will be presented, as well as the current state of these theories. Second, the application of these theories to sex offender registration and notification laws in research will be offered. Finally, a discussion of the relevance of these theories to the research project will be presented, including reasons pertaining to why both theories, but routine activities theory in particular is appropriate.

### **Historical overview**

Routine activities theory (Cohen and Felson, 1979) and rational choice theory (Cornish and Clarke, 1986; 1987) are both theories which place blame upon the criminal for the commission of a criminal act. The introduction and subsequent evolution of both of these theories may be attributed to the conservative political climate which existed in the United States in the 1970s and 1980s, the point in time when these theories were established. At this time, Americans sought criminal justice policies which were punitive as an answer to the crime problem. During these two decades, it was believed by many that rehabilitation was unsuccessful and as a result rehabilitation programs were phased out in many instances. Harsher sentencing policies were administered, more prisons were built, victim's rights were introduced, the war on drugs was waged and citizens began to take an overall general interest in retributive justice. The majority of the American public had reached the general consensus that criminals were knowing, thinking, rational individuals who were inherently bad and therefore had to be punished accordingly (Williams and McShane, 2004). Rational choice and routine activities

theories both fit in with the mood of American society at this time. They both provided a theory to explain crime in which the offender was almost solely to blame for their actions.

In addition to the political climate of the United States being ripe for the progression of these theories, the discipline of criminology was as well. Theoretical criminological development in the 1970s was thought to be lacking innovation, with the exception of new developments in radical and conflict theories (Williams and McShane, 2004). There were no theories at that time which captured sole individual culpability for the commission of crime. David Matza's (1964) drift theory was the closest. It did not hit the mark entirely, as he suggested that the will to commit crime was a factor which predisposes someone to commit a crime, but also asserted that it was not the only factor. Routine activities and rational choice trumped Matza's drift theory by allowing for the explanation of crime to rest upon the criminals. The introduction and more frequent use of self-report studies and national victimization studies at this time also influenced the ability of rational choice and routine activities theory to blossom. Statistics began to be generated from these sources which shed light on the extent of crime and victimizations, also adding to people's perceptions of the crime problem and the desire to be tough on crime and fault the criminal (Williams and McShane, 2004).

Criminologists believed that theory was beginning to become stagnant or dormant in the 1980's (Braithwaite, 1989; Meier, 1985; Williams, 1984). The reliance upon criminological theory for policy was believed to be unwise because it had not shown fruitful results in the past with the rehabilitation movement. However, the emergence of rational choice and routine activities theories in the discipline of criminology revitalized the stagnant field of theory, providing a revised way of viewing crime and criminal justice policy in the 1980s. These new theories represented a shift in belief back to the classical school and the ideals of a rational

offender, free will, deterrence and punishment. This new way of thinking became categorized as the neoclassical school (Brown, Esbensen and Geis, 1991). It was a new spin on an old standby. Both of these theories took ideas that had been a staple of the classical era of criminology and reinvented them to fit the climate of the American society and the discipline of criminology in the 1970s and 1980s.

### **Routine activities theory**

#### **Theoretical tenets and background**

Routine activities theory, the brainchild of Larry Cohen and Marcus Felson (1979), became a popular criminological theory that was prominent in the 1980s (Williams and McShane, 2004) and is still influential today, especially in regards to crime prevention tactics suggested and implemented as a result of this theory (Felson, 2002). Routine activities theory reasserted the idea that criminals are motivated, lucid beings who make a choice to commit crime based on a variety of factors, the main one being environment. Cohen and Felson (1979) based their theory on an earlier theory of human ecology by Amos Hawley (1950). He asserted that routine activities are a part of daily life and that when these activities are disturbed by a social change, social disorganization can occur, leading to crime. Cohen and Felson (1979) built upon Hawley's (1950) basic idea, asserting that environment is a key ingredient in crime causation. Cohen and Felson (1979) and Felson (2002) emphasize the importance of society in regards to explaining crime with this theory. They contend that there are changes at a societal level which may lead to an increase in crime. It is their assertion that if there are changes in society, there will then be changes in routine activities of individuals and subsequently variations in criminal opportunity, ultimately leading to a change in the amount of crimes committed.

According to routine activities theory, a societal change often acts as a catalyst, but in order for a crime to occur as a result of that change three necessary components must converge in time and space. These three components are a motivated offender, a suitable target and the absence of a capable guardian. All of which are necessary in order for a crime to occur. A motivated offender consists of someone who wants to commit a crime and who also has the ability to do so. The motivated offender part of the equation was not a tenet that Cohen and Felson (1979) placed a great deal of focus on explaining. In this theory, it is assumed that as a result of societal changes and environment influences or factors that there is indeed an individual whom is motivated to commit a crime.

However, in later writings Felson (2002) provides an explanation for motivation of offenders based upon influences from self-control theory (Gottfredson and Hirschi, 1990). He asserts that an offender's decision to commit crime could be based on the level of self-control that they possess. He contends that some individuals are better able to control themselves when placed in a situation in which there is the opportunity to commit crime. This may be a result of social and cultural differences or influences. It could also be attributed to the fact that some offenders may be swifter in making their decision to act than others. Offenders with low self-control who are placed in an environment in which there are suitable targets and a lack of a capable guardian have a harder time controlling themselves than those with a higher level of self-control who are placed in the same situation.

The second component necessary for a crime to be committed is a suitable target. This is comprised of some object that is worthy of taking or someone that appears to be a viable victim. As society has progressed and changed there has been an increase and change in the number of suitable targets. Specifically, as the United States has experienced financial growth over the past

several decades there has been more production and consumption of material goods by the general public. This has lead to new and additional opportunities for offenders to steal. The goods which have been produced are also more amenable to theft. The increase in manufacturing and selling of small, expensive goods has widened the market for theft, making it easier for the offender to access and transport such items (Cohen and Felson, 1979; Felson, 2002).

A suitable target may also be a person. Certain individuals based on routine, social activities and environment may be more susceptible to crime. Cohen and Felson (1979) argue that activities that take place within the home and the family produce lower risks of victimizations than activities that take place outside of the household or the family. Single people, young adults and adolescents have the highest rates of victimizations because they are more likely to engage in routine activities that take them out of the home and family setting and put them in situations which make them a target for victimization.

The final necessary component needed for a crime to occur is the absence of a capable guardian, which is the lack of someone who could intervene and halt the commission of a crime. Cohen and Felson (1979) and Felson (2002) assert that as a result of an increase in the general mobility of American society, such as more individuals living alone, moving into an urban setting and traveling to work or other activities outside of the home more frequently than in the past, there was a decrease in the number of available guardians. Simultaneously this shift has increased the number of available victims or suitable targets.

After World War II, Americans traveled more, worked more and bought more. This provided an opportunity for criminals to take advantage of the fact that people were alone, away from their homes, and in the possession of small, transportable valuable goods. More routine activities were taking place further away from the home, which created more situations in which



crime could occur and thus a change in the crime rate. Over the course of time from 1947 to 1974, there was an increase in rape, robbery and personal larceny. Cohen and Felson (1979) and Felson (2002) attribute the increase in these crimes to this change in lifestyle. Cohen and Felson (1979) also specifically note the changes seen in American demographics from 1970-1975 in which there was an increase in the number of women in the workforce as well as individuals enrolled in higher education and a decrease in households in which a husband was present could potentially have influenced the increase in the crime rate. As a result of these societal changes offenders did not have the worry of an overabundance of capable guardians to thwart their criminal opportunity.

These three things, a motivated offender, a suitable target and the lack of a capable guardian, must come together time and space in order for a crime to occur. According to this theory, if one of these key components is missing, a crime is unlikely to occur. If these elements do converge together and one of them is strengthened, that increases the chances that a crime will occur. Cohen and Felson (1979) and Felson (2002) assert that the shift in American society after World War II which altered the lives and routine activities of many citizens brought the three necessary components for crime together. Motivated offenders came into contact with suitable targets when there was a lack of capable guardians, thus influencing the crime rate.

### **The past and current theoretical state**

In the original proposition of routine activities theory, Cohen and Felson (1979) presented data on variations in trends regarding family, lifestyle, and consumerism and changes in the rates of both property and violent crime. They noted, as major changes were seen in the traditional American way of life, shifts were also seen in crime rates. Crime increased as life and society began to change. Although such relationships were discovered by Cohen and Felson

(1979), they acknowledge that the correlation between these factors may not be a direct measure of the tenets of routine activities theory. They assert that their conclusions are consistent with the theory, but that in the future this theory may be able to be expanded in new and different ways, such as the application of the theory to the potential motivation of offenders, which it failed to do in its initial presentation.

Routine activities theory has been extended by and Cohen (Cohen, Kluegel and Land, 1981) and Marcus Felson (2002) separately from its original version (Cohen and Felson, 1979). Cohen et al. (1981) renamed and revised the theory, referring to it as opportunity theory. In the updated version, there are new propositions regarding the attractiveness of a target, the proximity of that target to the offender, exposure of offender to the target and the amount of guardianship that target receives. All of these things make it more or less likely that a crime will occur. Cohen et al. (1981) tested opportunity theory using National Crime Victimization Surveys. Although there were some inconclusive findings, they did find support for the revised version of the theory and most of the hypotheses tested, concluding that opportunity theory can serve as an explanation for crime.

This extension and revamping of routine activities theory into opportunity theory by Cohen et al. (1981) may not translate well into explanations of individual motivations or actions of sex offenders. Sex offenders, particularly pedophiles, create opportunities for themselves in regards to offending. They may orchestrate the particulars of the crime, including the proximity they have to the victim and also the amount of guardianship the victim may receive, especially if the victim is a family member or close friend which might increase the control they have regarding the circumstances in which they see that child. This is a created opportunity. The offender is creating the opportunity to offend. It differs from an encountered opportunity in

which a sex offender stumbles upon a situation or occasion in which it would be fortuitous for them to commit a crime. In the instance of an encountered opportunity, opportunity theory could be applicable to sex offenses which are covered by Megan's Law that are more spontaneous in nature, such as rape by a stranger or indecent exposure, which may occur as a result of an attractive, unguarded target.

Felson (2002) also has done further writings regarding routine activities theory, most of which deal with crime prevention techniques. This has included variations in routine activities and altering physical settings to reduce crime. Felson and Clarke (1994) assert that crime is prevented when the opportunity to commit that crime is blocked. The opportunity for a crime is very specific and if that opportunity does not exist or there is some obstacle in the way, it is likely that crime will be prevented. This is the basis for many of the recommendations for crime prevention strategies Felson (2002) makes using routine activities theory as a guide.

Routine activities theory has principally been tested as an explanation of both property and violent crime at the macro-level. It has been used to explain changes in overall crime rates when examining differences between countries (Bennet, 1991), variations in crime rates in different parts of a country (Messner and Blau, 1987), and crime rates in neighborhoods (Massey et al., 1989; Roncek and Maier, 1991). It has also been used to explain characteristics between the time and location of homicides (Messner and Tardiff, 1985) and violent and property crime (Kennedy and Forde, 1990; Tewksbury and Mustaine, 1998). Sherman, Gartin and Buerger (1989) employed routine activities theory to explain predatory crime. They found certain areas are hotspots for such crimes, with only a few areas producing most of the calls for service from police in Minneapolis.

Other researchers have built upon the idea of the influence of routine activities on hot spots of crime and discovered that certain areas or establishments have higher rates of calls. Bars experience increased rates of criminal activity (Gorman, Zhu and Horel, 2005; Roncek and Maier, 1991, Sherman, Schmidt and Velke, 1992). Research has indicated that most offenders do commit crime within distances close to their own daily activities, such as en route to work, school, home or social activities (Brantingham and Brantingham, 1983; 1999; Pyle et al., 1974). In addition, routine activities theory has also been used to explain crime in the aftermath of a hurricane (Cromwell et al., 1995).

Routine activities theory has also been applied to juvenile delinquency. Vazsonyi, Pickering, Belliston, Hessing and Junger (2002) found a connection between juvenile delinquency and routine activities of juveniles. Research has shown that routine activities influences the crime of vandalism for juveniles (Tewksbury and Mustaine, 2000), as well as burglaries (Cromwell, Olson and Avary, 1991; Scott, 2004; Tseloni, Wittebrood, Farrell and Pease, 2004). Most research pertaining to juvenile delinquency and routine activities theory is done regarding schools and the roles that schools play, making schools hot spots for crime (Kautt and Roncek, 2007; Roncek and Lobosco, 1983; Roncek and Faggiani, 1985). Felson (1993) asserts that schools are only accredited with a small portion of crime, when in fact they generate much more.

### **Routine activities theory and sex offenses**

While routine activities theory has been somewhat widely applied in terms of types of crimes, it has been more sparsely applied in examining and explaining sex offenses which would fall under the legislation of Megan's Law. It has principally been applied in regards to child homicide (Boudreaux, Lord and Jarvis, 2001) and sexual murders of children and women

(Beauregard, Stone, Proulx and Michaud, 2008). Most child homicides are perpetrated by someone known to the child, who they interacted with on a routine basis (Boudreaux, Lord and Jarvis, 2001) or by an offender who has intentionally created contact with the child. The offender then will wait for an opportunity to commit the crime, such as a lack of parents or guardians and/or the ability to lure the child away (Beauregard et al., 2008). Children often will have come into contact with their attacker throughout the course of daily activities or routines (Boudreaux, Lord and Jarvis, 2001; Beauregard et al., 2008)

In addition, Beauregard et al., (2008) assert that the sexual murders of women are even more likely to adhere to the routine activities perspective than the sexual murder of children. This is a result of the fact that most sexual murders of women involved the victim's consumption of drugs and/or alcohol prior to the crime and the offender subsequently targeting those that consumed these items, usually at night. Offenders met potential victims who these types of behaviors are routine or common place for, at night, usually at a bar. The motivated offender and the suitable target converge in the course of routine activities in a bar setting and without a guardian to intervene, a crime occurs.

The rationale for the implementation of Megan's Law appears to be driven by the tenets of routine activities theory, yet it has not been applied specifically in assessing the impact of Megan's Law. Researchers have only employed routine activities as a theoretical framework for crimes such as child homicide (Boudreaux, Lord and Jarvis, 2001) and the sexual murder of children and women (Beauregard et al., 2008). A broader assessment of Megan's Law generally and also a more specific application of this theory to additional crimes, would seem to be appropriate and necessary. Megan's Law is based upon the idea that if citizens are aware of the presence of sex offenders which reside in their community, they can take proactive steps to avoid

coming into contact with these individuals throughout the course of their daily routine activities, and/or take steps to increase guardianship, thus preventing victimization. One of the goals of the proposed project is to apply routine activities theory in the general assessment of the impact of Megan's Law and also to use it as a basis for examining the impact of the law on a series of specific crimes.

### **Rational choice theory**

#### **Theoretical tenets and background**

Rational choice theory is most associated with the work of Derek Cornish and Ronald Clarke (1986, 1987). This theory is a return to some of the ideals which were personified in the classical school of criminology, such as free will, deterrence and hedonistic calculus. Cornish and Clarke (1986) based this theory upon the expected utility principle, which is rooted in economic theory. It states that individuals make decisions based upon how much they seek to gain or stand to lose from a choice. After weighing the potential benefits and costs, an offender decides whether to engage in crime. Through this principle, rational choice theory aims at explaining the decision of an individual to commit a crime, as well as the decision to continue with a life of crime or desist. Rational choice does not focus on the specific motivations of an offender to commit a crime, but rather assumes individuals are motivated.

Cornish and Clarke (1986) separate the decision to commit a crime into two separate categories, involvement and event decisions. An involvement decision is the decision of an offender to initially become involved in crime, as well as to either continue or to stop offending. This decision is influenced by a person's previous occurrences in their life as well as experience with crime, either personal or vicarious. It is also a product of the person's specific learning history, the morals they possess, the view or opinion they have of themselves and whether or not

they have forethought in decision making. The learning and experience which influence an involvement decision are different for everyone and are a product of a variety of different background factors for an individual. The socio economic status, upbringing, and demographics of an individual all have influence and subsequently their involvement decision as to whether or not they will commit a crime.

Cornish and Clarke (1986) also acknowledge the role that informal and formal sanctions play in the rational choice of offenders to become involved in crime. According to this theory, offenders will think about the potential sanctions such as being arrested or facing the disapproval of others before committing a crime. Individuals will also consider the moral costs associated with becoming criminal. Religion or belief systems may influence the moral decision. However, the degree to which a person considers such things varies and is based upon the individual. Most recently, McCarthy and Hagan (2005) extend the idea of rational choice to include harm. They assert that offenders will choose to avoid harm and that this will weigh into their decision whether or not to commit a crime. An offender will still consider other aspects of a crime as outlined by Cornish and Clarke's (1986) rational choice theory, but they also will take into consideration the amount of harm that could come to them if they decide to act.

Event decisions are those which are related to the commission of a crime, such as the logistics or how the crime will actually be committed, as well as what type of crime to commit. Cornish and Clarke (1986) refer to this as the criminal event model. The decision of what specific crime to perpetrate is often a result of the situation. An offender will commit the crime that meets their current needs. Cornish and Clarke (1986) assert a "crime specific model" in which there is a different crime decision making process for each type of crime and as a result different event decisions or strategies which need to be considered. The tactics needed to commit

a crime influence the involvement decision. If a crime is going to be difficult to commit, that may factor into an individual's initial decision to commit the crime. In addition, a criminal may alter their strategies to commit crime as they gain experience because crime is a dynamic process which is affected by situational influences (Cornish, 1994).

### **Past and current theoretical state**

Rational choice theory has been used to guide research on the influence that the estimation of cost and benefit play in decision making on a variety of different crimes since its introduction by Cornish and Clarke (1986). It has been most frequently applied to property crimes such as burglary (Bennet and Wright, 1984; Cromwell, Olson and Avary, 1991; Rengert and Wasilchick, 1985; Walsh, 1986; Wright and Decker, 1994; Wright and Logie, 1988), auto theft (Fleming, 1999), shoplifting (Carroll and Weaver, 1986; Cromwell, Parker and Mobley, 1999), and robbery (De Hann and Vos, 2003; Feeney, 1986, Petrosino and Brensilber, 2003; Wright and Decker, 1997). It also been applied to sex offenses (Beauregard and Leclerc, 2007; Beauregrad, Proulx and Rossmo, 2007; Leclerc, Beauregard and Proulx, 2008; Proulx, Ouimet and Lachaine, 1995) which will be discussed in the following section.

When examining crime from the rational choice perspective, some researchers have looked at the role that an individual's self-control, association with delinquent or criminal peers, morals, strains or stressors, and emotions play in the decision to commit a crime (Exum, 2002; Carmichael and Piquero, 2004; McCarthy, 1995; Nagin and Paternoster, 1993; Piquero and Tibbets, 1996; Piquero and Paternoster, 1998). Specifically, self-control level has been shown to have an effect on an offender's ability to approximate the costs and benefits of crime. Those with low levels of self-control believe the costs of committing a crime to be low, while the benefits are high (Piquero and Tibbets, 1996). Self-control is a factor influencing offender's assessment



of potential risks and rewards and thus influencing crime (Bachman, Paternoster and Ward, 1992; Piquero and Paternoster, 1998; Nagin and Paternoster, 1993). Research has shown that individuals are more likely to commit crime when they perceive the costs of crime to be low and the benefits to be high (Bachman, Paternoster and Ward, 1992; Paternoster and Bachman, 2001; Piquero and Tibbets, 2002; McCarthy and Hagan, 2005; Nagin and Paternoster, 1993).

The rational choice of an offender to commit a crime has been looked at in regards to property crime. Tunnell (1992) examined the decision making process of property offenders and discovered that when contemplating crime, offenders did weigh the costs and benefits of the commission the act. Tunnel (1992) found that offenders committed crime if they believed there was a low likelihood that they would be apprehended. In addition, the notion that even if they were caught, they would not serve much time in prison or they were not afraid of prison, also weighed into the decision making process. The progression that offenders took in their minds to reach the decision to commit crime did not definitively represent the rational choice model as presented by Cornish and Clarke (1992), as they did not make a rational or reasonable estimation of the probability of apprehension, had a vague knowledge of the penalties under the law for the crimes they committed and failed to implement a well planned strategy for the commission of the crime. A criticism of rational choice theories, which may be attributed to the results found in this study, is that these theories do not directly address issues relating to level of development and offender decision making. Individuals have different cognitive abilities which influence thinking and rational decision making processes. Rational choice does not account for these differences or offer an explanation of how this may play a part in the decision to commit crime.

Similar results were found by Cromwell, Olson, Avary (1991) in their ethnographic study of burglars in which they found professional burglars do engage in particularly rational decisions

before committing to the decision to commit a burglary. De Haan and Vos (2003) in their study of street robbers discovered that the decision to rob someone did not quite fall within the realms of rational choice theory. The decision to rob an individual was most often the result of needing money, but other factors such as impulsivity and emotionality, which is not part of rational choice theory, played a part in their decision to commit a robbery.

Although there has been research which has supported rational choice theory, there has also been research which challenged the tenets of this theory. It has been argued by some criminologists that many offenders commit crime without any previous forethought and with no weight being given to the potential consequences or gains from their actions. Many offenders act under the influence of drugs and/or alcohol and/or as a result of being angry (Carmichael and Piquero, 2004; Exum, 2002) which eradicates their ability to think clearly and rationally. Akers (1990) argues that rational choice is indistinguishable from other theories of crime of this nature and Opp (1999) asserts that rational choice theory would better serve criminological research if it embraced the notion of a wide model instead of narrow model. Rational choice theory should embrace the idea of limited rationality in an offender in lieu of the notion of utmost rationality in an offender when deciding to commit a crime.

### **Rational choice and sex offenses**

There has been a fair amount of research applying rational choice theory to a variety of sex offenses. Specifically, research has examined ways in which sex offenders reach the decision to commit a crime. Research has indicated that certain types of sex offenders are rational in decision making as a result of the fact that their behavior in the commission of a sex crimes often falls on a sequential, deliberate time line. For example offenders who commit acts of child sexual abuse, an offender must first work to gain the trust of a potential victim in order to secure

cooperation for the sexual acts and subsequent silence about the acts of abuse (Elliot, Browne and Kilcoyne, 1995; Leclerc, Proulx and McKibben, 2005). Beauregard and Leclerc (2007) in their study of 69 serial sexual offenders discovered that in some instances (35%) there was no premeditation or plan, but that most (51%) of offenders had a general plan and exploited an opportunity in their environment for the commission of a sex crime. This lends support to the notion in rational choice theory that as a result of situational characteristics, an individual may engage in criminal behavior. Some offenders reported that they had an idea of what and how they wanted to commit the crime, they were just lacking the opportunity. The qualitative component of Beauregard and Leclerc's (2007) research also indicates that there is a rational choice model that many offenders follow. It begins with the planning and the estimation of risk and the potential of apprehension. This is followed by the criminal event phase in which the logistics of the crime is planned. Finally, the aftermath of the offense is planned in which the offender orchestrates the events leading to the end of the crime and the location where the victim will be released.

There is research that indicates that sex offenders will weigh the cost and benefits of committing a crime and make a decision accordingly (Leclerc, Beauregard and Proulx, 2008). The potential costs and benefits are influenced by situational factors, which affect aspects of crime commission, such as the selection of a victim or crime location. Cornish and Clarke (1987) assert that there are choice structuring properties that accompany the decision to commit a crime. Certain properties or characteristics of an offense may provide a reason for an offender to select a different course of action or use different strategies in order to carry out the crime. In regards to sex offenses, if there was a road block for a sex offender to obtain a victim or a crime location,

research has shown that a sex offender may change their strategy in order to commit the crime more effectively (Beauregard, Rossmo and Proulx, 2007; Leclerc, Beauregard and Proulx, 2008).

Sex offenders may select to commit their offenses in a private location as opposed to a public one, such as their own home (Beauregard, Rossmo and Proulx, 2007; Kaufman, Homberg, Orts, McGrady, Rotzien, Daleiden et al., 1998; Leclerc, Beauregard and Proulx, 2008; Ouimet and Proulx, 1994; Wortley and Smallbone, 2006) or workplace (Beauregard, Rossmo and Proulx, 2007) because of a decreased risk of detection. An offender is better able to plan if the crime is committed in a place that he or she is familiar with (Leclerc, Beauregard and Proulx, 2008). Sex offenders display rationality in their hunting strategies. In Proulx, Ouimet and Lachaine's (1995) examination of the decision making process of pedophiles found that a degree of rationality to be present. They discovered that a pedophile must first decide where they will hunt for victims, the time of the attack, followed by the choice of victim and finally, the strategy they will employ to sexually abuse the child.

The selection of a type of victim is also a rational decision as indicated by much of the research. Offenders will select victims who are available to them and identify them in advance which situations allow the offender and the victim to interact. In instances of child molestation, a pedophile most often sexually abuses a child who is known to them, such as other family members. Pedophiles frequently abuse those who are more accessible and upon whom they can exercise authority and convince the victim not to disclose the abuse (Kaufman et al., 1998; Smallbone and Wortley, 2000). This is also illustrated with research conducted by John Jay College (2004, 2006) on child sexual abuse perpetrated by priests. The priests had a prior relationship with the children they abused. In instances that a sex offender commits acts against a victim that is not a family member or intimate, they may chose to employ the use of drugs and/or

alcohol in order to commit the offense (Kaufman et al., 1998). A sex offender also may decide to select a victim based upon the situation they find themselves in (Leclerc and Beauregard, 2007) and who they judge to be a viable victim. However, this is usually someone known to the offender and who the offender has access to, whether it is a family member, a parishioner or a close friend.

Rational choice theory has been applied to sex offenses in the past, but not specifically to Megan's Law. Research has indicated the sex offenders weigh the costs and benefits of their actions (Leclerc, Beauregard and Proulx, 2008) and in some instances making deliberate, calculated assessments prior to the commission of a crime. It can be asserted that Megan's Law is based, at least in part, on the basic tenets set forth by rational choice theory. If a sex offender knows that community members are aware of their presence, they may not decide to commit a crime for fear of possible detection by informed citizens. In addition, the registration and notification requirement may serve as a deterrent for offenders when deciding to commit a crime. An offender may think that the risk of being apprehended and labeled a sex offender may not be worth the pleasure or satisfaction of offending. The goal of the proposed project is to assess the efficacy of Megan's Law using the concepts of rational choice theory, which Megan's Law is partly based upon.

However, the view that sex offenders are rational decision makers, while influencing this legislation, cannot account for all behavior of sex offenders or the implementation of Megan's Law. Another component is needed. The incorporation of routine activities theory, in addition to rational choice theory, informs this project, allowing multiple theoretical areas to be encompassed. Rational choice theory only allows for there to be explanation of the fact that there are rational sex offenders who, after weighing the costs and the benefits of committing a

sexual offense, either decide to offend or not. Routine activities allows for there to be an explanation of what could potentially influence a rational offender to make a decision of whether or not to engage in the commission of a crime. For example, a motivated and rational sex offender may be presented with a suitable target and the lack of a capable guardian throughout the course of their daily, routine activities. As a result, the offender commits a crime. Megan's Law is based upon the premise that there are rational offenders waiting for the chance to offend and that in order to prevent such crimes, citizens need to be informed. Coupling these theories in the examination of the effectiveness of Megan's Law allows for a more complete explanation as to why a rational offender may choose to commit a sex offense because it explicates the motivation and the situational circumstances in which crimes occur.

#### **The effectiveness of Megan's Law: Where rational choice meets routine activities**

The basis of Megan's Law and sex offender registration and notification is to prevent sexual offenses. The law is based in an assumption that there is a rational sex offender who will make the conscious, deliberated, rational choice to commit a sex crime. Megan's Law seeks to prevent or deter a sex offender from making this choice. The idea for prevention is based upon the notion that when an offender is contemplating committing a sex crime they will take into consideration that if they are apprehended and convicted they may have to register and notify people in their community about their offense. However, the issue or caveat with this rationale is that all sex offenders may not be cogent beings who weigh the costs and benefits before committing a crime. The degree of rationality of sex offenders may differ and this is where the rational choice model as a sole theoretical basis for Megan's Law falls short. It may be that there are indeed rational sex offenders who meticulously plan their crimes, but it also may be the case

that a situation as influenced by environment has a lot to do with the crimes that are committed and serves as a better explanation for why Megan's Law prevents crime.

In the creation of the sex offender registry and notification system, Megan's Law allowed citizens to be aware of offenders living in their community. The goal was that this information would allow people to avoid these individuals in the hopes that crime would be prevented. In the course of their daily activities, a citizen could avoid a sex offender if they knew who that offender was. This basis lends itself to routine activities theory. Megan's Law is trying to stop the motivated offender and the suitable target from converging in space and time with the lack of a capable guardian. If a person is aware that there is a pedophile that lives down the street, then they can restrict the contact that their child has with them. Also, if a serial rapist lives in the next apartment, a woman can take added precautions to avoid him throughout the course of daily, routine activities. Through the dissemination of information, Megan's Law is attempting to prevent crime by informing individuals of the whereabouts of sex offenders so that they can alter their activities or routines.

Rational choice and routine activities theories both would seem to provide a basis for support for Megan's Law and for the purposes of this project, can be used to examine and explain the potential for effectiveness (or lack thereof) of this legislation. A rational offender may exist within a community and could potentially be deterred from deciding to commit a new or repeat crime as a result of facing notification and registration, which could prevent crime. However, if this is coupled with the fact that as a result of the potential victims knowing of their presence and altering their routine activities to avoid sexual offenders, it could also prevent crime in a greater capacity. Previous research on Megan's Law has not employed routine activities theory as a theoretical guide. Most research on the subject looks to aspects of

deterrence theory. The incorporation of both rational choice and routine activities in this project in order to examine the effectiveness of Megan's Law can present a new way of assessing this legislation.



## CHAPTER IV

### METHODOLOGY

The intent of this research was to assess the impact/effectiveness of Megan's Law in Pennsylvania. This research examined whether the implementation of this initiative has been successful in reducing selected crimes which warrant registration as indicated by Megan's Law. In order to determine the efficacy of Megan's Law, an interrupted time series design (ITS) was utilized. Interrupted time-series designs have been demonstrated to be a particularly appropriate and effective methodology for assessing the impact of laws (McDowall et al., 1980; Ostrom, 1990; Shadish, Cook and Campbell, 2002). ITS designs have been used successfully in the assessment of a variety of public safety laws such as three strikes laws (Ramirez and Crano, 2006; Stolzenberg and D'Alessio, 1997), laws governing gun control (Carrington and Moyer, 1994; Loftin, McDowall, Wiersema and Cottey, 1991; O' Carrol et al., 1991; Webster, Vernick and Hepburn, 2002), drunk-driving laws (Figlio, 1995; Neustrom and Cook, 1991; West, Hepworth, McCall and Reich, 2006;), river boat gambling (Wilson, 1991) and juvenile curfew laws (Reynolds, Seydlitz and Jenkins, 2000).

The current study used a series of simple ITS designs in order to determine the impact that the implementation of Megan's Law has had on murder of a child, forcible rape, and sex offenses in both urban and rural/suburban areas. Statewide Uniform Crime Report annual data was used for the years 1974 to 2009 are used for analysis. For the years 2001 through 2010, standardized monthly data was analyzed. There were 22 pre-treatment yearly observations for the initial implementation of Megan's Law on April 26, 1996 and 14 years post treatment. Although, one hundred total observations are considered to be desirable for use in time series projects, a lesser number of observations may be used and models can still be adequately

identified (Shadish et al., 2002). For the subsequent revision of Megan's law on November 24, 2004, in which all information regarding registered sex offenders was made available to the public via the Internet (42 Pa. C.S.A. § 9798), there were 47 monthly pre-treatment data points 73 monthly post-treatment observations. The number of pre and post-treatment observations for the study ensures that there are a sufficient number of observations for the use of ARIMA modeling.

In this chapter, the methods of this project will be outlined. First, a description of the independent and dependent variables that were used to determine the effectiveness of Megan's Law will be presented. In addition, the data sources for these variables will be discussed. Second, a presentation of the selected ITS design for this project will be covered. Third, the anticipated threats to validity for the study will be detailed, as well as the measures put in place to control for these validity threats.

### **Independent variables**

In interrupted time series designs, the independent variable is determined with the knowledge of the specific point in time at which a treatment occurred. If the treatment has an impact, there will be a different slope or change in the series after the treatment occurred (Shadish et al., 2002). There are two independent variables in this study. The first, and primary, is the original implementation of Megan's Law, which the law went into effect on April 21, 1996. The second is subsequent revision of the law on November 24, 2004, which allowed for the public viewing of the registry online.

### **Dependent variables**

The dependent variables for this study include multiple offenses: Urban rape; suburban/rural rape; rape of an individual under the age of 18; rape of an individual over the age

of 18; murder of an individual 14 and under; urban sex offenses; and suburban/rural sex offenses. These offenses were selected because of the gamut of offenses that Megan's Law covers and the commission of which warrants registration and also based on variables utilized in past research. Murder alone does not warrant registration and notification. However, it does if it is committed in conjunction with a sexual offense. Megan's Law was passed as a result of, and with the intent of preventing, the murder and rape of children. Therefore, it was necessary to examine not only rape, but the murder of children as well. The Uniform Crime Report data allows for murder to be disaggregated by age of victim, beginning with murder of an individual 14 and under and then 15 and over. The data existed as such. The murder of individuals 15 and over also will be included as a nonequivalent dependent variable to help address threats to validity (see below for a more detailed discussion). However, it is believed that the intent of this law was to prevent the murder of children and the variable, murder of an individual 14 and under captures this.

Rape was also included as a dependent variable in the research because under Pennsylvania's Megan's Law, those convicted of rape of a person of any age warrants a lifetime registration. In addition, Vasquez et al. (2008) in their examination of the efficacy of sex offender registration and notification in ten states used the dependent variable forcible rape. Sandler et al. (2008) also used rape as a dependent variable in their examination of New York's sex offender registration notification and registration using a time series analysis. The current study examined urban rape, suburban/rural rape, as well as rape of an individual over the age of 18 and rape of an individual under the age of 18.

There is an aggregate category in the UCR termed "sex offenses." According to the UCR handbook, the crimes covered under the category of sex offenses are all of the following: adultery, buggery, incest, incest exposure, indecent liberties, statutory rape (no force) and

attempts to commit any of the above. It was important that the UCR category of “sex offenses” be included in the analysis as many of the crimes included in that category warrant registration under Megan’s Law. As these different offenses are not broken out in the UCR, this was an aggregate variable which includes a total count of all these offenses for the given observation period. Sex offenses were also broken down to include urban sex offenses and suburban/rural sex offenses.

Aggravated assault, robbery, and murder were included as nonequivalent dependent variables in the proposed research, as well as murder of individuals 15 and over. Including nonequivalent dependent variables allowed for the examination of possible threats to internal validity as well as construct validity in time series data. The inclusion of nonequivalent dependent variables, variables that the independent variable should theoretically not have an effect upon, but may react in the same way as the primary dependent variables allows the researcher to make assertions about the strength of their study. If the nonequivalent dependent variables do not change in response to the treatment, the inference that the dependent variables changed as a result of the treatment is strengthened (Shadish et al., 2002). These particular variables were included based on past research. Sandler et al. (2008) and Letourneau et al. (2010) in their research examining the efficacy of sex offender registration and notification policies in the state of New York (Sandler et al. 2008) and South Carolina (Letourneau et al., 2010) used time series designs and included both aggravated assault and robbery, which are serious violent non-sex offenses in order to control for any nonspecific factors that may have had an effect on violent crime rates in general. In this study, urban and suburban/rural aggravated assault, urban and suburban/rural robbery, urban and suburban/rural murder, and murder of an individual 15 and over were included and utilized to assess if there may be other factors operating that

generally affect violent crime across different categories. The results of these variables will be discussed later in the chapter.

### **Conceptual definitions**

The current study assesses the effectiveness of Megan's Law in the state of Pennsylvania. *Effectiveness* is defined, for the purposes of this study, as the lowering of crime rates for the selected dependent variables (urban rape, suburban/rural rape, rape of an individual under the age of 18, rape of an individual over the age of 18, murder of a child under the age of 18, urban sex offenses and suburban/rural sex offenses) both after the initial implementation of Megan's Law on April 21, 1996 and after the subsequent alteration of the law on November 24, 2004. The dependent variables in the study are defined using the Uniform Crime Report definitions.

According to the UCR, *forcible rape* is defined as, "The carnal knowledge of a female forcibly and against her will. Included are rapes by force and attempts or assaults to rape." *Murder* or criminal homicide is defined as, "the willful (nonnegligent) killing of one human being by another." *Sex offenses* (except forcible rape, prostitution, and commercialized vice) are defined as, "Statutory rape and offenses against chastity, common decency, morals, and the like." Sex offenses include the following; adultery, buggery, incest, incest exposure, indecent liberties, statutory rape (no force) and attempts to commit any of the above (PA UCR, 2011).

The nonequivalent dependent variables being used in the study are urban and suburban/rural robbery, urban and suburban/rural assault, urban and suburban/rural murder and murder of an individual over the age of 18. Effectiveness can also be defined in terms of using the nonequivalent dependent variables. The faith that we have in the conclusion that Megan's Law has been effective (as defined above) is enhanced if there is no change (at least comparable change) in the nonequivalent dependent variables after the original implementation of Megan's

Law on April 21, 1996 or its amended version on November 24, 2004. If Megan's Law is effective in reducing the targeted crimes it should not have had an effect on crimes which it was not targeting, which is in this case, the nonequivalent dependent variables.

The Pennsylvania Uniform Crime Report definitions are also utilized for the nonequivalent dependent variables. *Robbery* is defined as, "The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear". *Aggravated assault* is defined as, "An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by the use of a weapon or by means likely to produce death or great bodily harm". Simple assaults are excluded (PA UCR, 2011). The definition for murder has already been mentioned previously in the discussion of the definitions of the dependent variables.

### **Operational definition**

An operational definition is the process by which the variables in your study are transformed from their meaning at the abstract or conceptual level to empirical measurements (Maxfield and Babbie, 2005). In this study, the operationalization of the independent variable is simple. It is the point at which Megan's Law and the amendment went into effect. The dependent variables will be operationalized as the rate statistics reported in the UCR for the observation periods (1972-2010). Effectiveness will be operationally defined as the change in the dependent variable between pre and post observation periods.

### **Data**

In order to assess the effectiveness of Megan's Law in Pennsylvania, data was used from the Pennsylvania Uniform Crime Report for the years 1974 through 2010. Hard copy annual

Uniform Crime Reports were utilized for the years of 1974-2000, as they only exist in that form. Monthly Pennsylvania UCR data does not exist prior the year 2001, as a result yearly data was utilized for those years. The earliest data that exists are from 1974. Pennsylvania Uniform Crime Report reference materials in the IUP library were used to provide the necessary data for the years 1974 to 2000. Monthly data for more current years, 2001 through 2010 was obtained from the Pennsylvania UCR website, as well as annual data for these years. Each of the urban variables was created by adding the rates for the two largest urban areas in Pennsylvania (Allegheny and Philadelphia County) together. The suburban/rural variables were created by subtracting the number found for the urban areas, those of Allegheny and Philadelphia County, such as rape, from the total number of known crimes in the state of Pennsylvania for the other existing counties. Allegheny and Philadelphia County accounted for the majority of the crime in the state and are home to the largest urban areas, which is the reason for their selection.

The inclusion of urban and suburban/rural variables comes as a result of suggestions made by past researchers. Vasquez et al. (2008) commented that by examining Megan's Law on a smaller scale, such as city-level, one may see different results in effectiveness based on crime rates. In the current study, there was a difference in crime rates for urban areas as opposed to suburban/rural areas. In addition, Sandler et al. (2008) suggested that examining Megan's Law based on geographic area may show differences and/or trends in the effectiveness of Megan's Law.

### **Interrupted Time-Series (ITS) Design**

In order to assess the effectiveness of Megan's Law in Pennsylvania, a series of simple ITS designs were utilized. A simple ITS design consists of numerous observations on a variable over time, with those observations being interrupted by a treatment at a specific point in time. In

studies which are assessing a law, it is essential to know the exact date the law was passed, which serves as the independent variable (X) (Shadish et al., 2002). When using a simple ITS design, the dependent variable(s) are observations which are uniformly and autonomously spaced (Ot). These observations are based on periods of time (t) which occur either before or after the treatment, which in this case is the enactment of Megan's Law. In a simple ITS design, the null hypothesis is that the treatment, or enactment of the law, will not affect the trend that was seen before the treatment occurred or the law was passed. The rejection of the null hypothesis is that the change which occurred in the series is attributed to the treatment, or in the case of the proposed research, the passage of Megan's Law.

The passage of Megan's Law on April 21, 1996 served as the first model for the data, as it is the first time the series is interrupted. Annual data was examined from 1974 to April 1996 as the pre-treatment and May 1996 to November 2004 as the post treatment, with monthly data being utilized beginning in January 2001 as that is the first available monthly data that exists. November 2004 served as the end point for this model as that was when Megan's Law was changed.

A new model begins with November 2004 when Megan's Law was altered to include sex offender registration information online. The pretreatment for this model will begin with annual data beginning May 1996 and continue to November 2004. Also, monthly data will be used for January 1, 2001 to November 2004 as a pretreatment. Post treatment will include annual data for 2005 to 2010 and also monthly data for December 2004 to December 2010.

## **Hypotheses**

There are separate hypotheses based upon the initial passage of Megan's Law and the subsequent alteration of Megan's Law. First, it was hypothesized that there would be a decrease



in forcible rape rates for both individuals under and above the age of 18, post treatment as a result of the passage of Megan's Law on April 21, 1996. In addition, it was hypothesized that there would be a decrease in sex offenses and a decrease in murder rates with victims under the age of 18 post treatment as a result of the implementation of Megan's Law on April 21, 1996. A statistically significant decrease in these dependent variables would indicate that Megan's Law was effective, as it reduced targeted crimes.

It also was hypothesized that there will be another decrease in forcible rape rates for both individuals under and above the age of 18 post treatment a result of the revision of Megan's Law on November 24, 2004 in which the registry may be viewed online. In addition, that there would be a decrease in sex offenses and murder of individuals 14 and under as result of the alteration of Megan's Law on November 24, 2004. A change in these crime rates would indicate that the change in the law, adding the online component, would have been successful in lowering crime.

In terms of assessing potential threats to validity it was not anticipated that there would be any changes in the nonequivalent dependent variables. It was anticipated that there would be no change (or at least not a change of the same magnitude and/or direction) in the rates of aggravated assault, robbery or murder of individuals over the age of 18 post treatment as a result of the passage of Megan Law April 21, 1996. In addition, it was also hypothesized that there would be no comparable change in the rates of aggravated assault, robbery or murder of individuals 15 and over post treatment as a result of the revision of Megan's Law on November 24, 2004.

In summation, the current study, in order to examine the effectiveness of Megan's Law used an interrupted time-series design utilized two separate models. The first was a pre and post treatment that utilizes the original passage of Megan's Law on April 21, 1996. The second is a

pre and post treatment that looks at the revised version of Megan's Law which was passed November 24, 2004. In order to assess the effectiveness of Megan's Law the following dependent variables were utilized: rape of individual under the age of 18; rape of individual over the age of 18; murder of an individual 14 and under; urban rape; suburban/rural rape; urban sex offenses; and suburban/rural sex offenses. Nonequivalent dependent variables were also used as a control measure for validity purposes and these include: urban murder; suburban/rural murder; murder of an individual 15 and over; urban robbery; suburban/rural robbery; urban aggravated assault; suburban/rural aggravated assault. Pennsylvania Uniform Crime Report Data was used in annual form for the years 1974-2009 and in monthly form from January 2001 to December 2010. Once again, the reason for the inclusion of these years is that the earliest that the data exists is 1974 and monthly data does not exist prior to 2001. The data was examined by examining urban versus rural.

### **Threats to Validity**

ITS designs allow the researcher to assess changes in the dependent variable. However, the changes that are seen in the dependent variable may not always be attributable to the treatment or independent variable. While utilizing ITS designs can reduce threats to validity, it certainly does not guarantee the researcher absolutely zero threats to validity. There may be threats to validity within ITS designs (Shadish et al., 2002). The following section will detail the potential threats to validity for the current research.

### **Internal validity**

Internal validity relates to the causal relationship between two variables. In order to establish internal validity it must be shown that X causes Y and also (generally) X comes before Y in time. In addition, to show that a study has internal validity other explanations for the

relationship between X and Y must be ruled out (Shadish et al., 2002). There are of course a variety of factors that may act as threats to internal validity. Shadish et al. (2002) identified nine types of potential internal validity threats that could potentially cause researchers to mistakenly infer a causal relationship between the independent and dependent variable (s). These nine items are as follows: ambiguous temporal precedence; selection; history; maturation; regression; attrition; testing; instrumentation; and additive and interactive effects of threats to internal validity (p.55).

Not all of the threats to internal validity identified by Shadish et al. (2002) apply to all ITS designs. In assessing the impact of a law, ambiguous temporal precedence, maturation, attrition, regression and testing, selection and instrumentation are generally not applicable (Shadish et al., 2002). In the current research which assessed the effectiveness of Megan's Law, the date the law was enacted is known specifically and therefore is able to serve as the independent variable (X), which makes ambiguous temporal precedence not an issue. Maturation is also not applicable to this research as the law is still in effect and still remains supported by the general public (Zevitz and Farkas, 2000a; Reidlich, 2001; Proctor, Badzinski and Johnson, 2002; Levenson, Brannon, Fortney and Baker, 2007; Lieb and Nunlist, 2008; Schiavone and Jeglic; 2009 ).

Attrition is also not a plausible threat to the current study as there are not participants, but the dependent variable is being measured using rates as reported by the Pennsylvania police via the Uniform Crime Report. In addition, regression and testing do not pose a threat to the internal validity of this study as the items selected for inclusion in this study are not being selected based on a specific score or a test. The pre and post-treatment observations that were used in this study includes monthly and yearly arrests recorded by the police for the state of Pennsylvania. In

addition, the plausible threat of regression to the mean is able to be identified and potentially controlled for with the use of multiple ITS.

Selection bias is not a concern as a potential threat to validity in this study based on the fact that there is no evidence of statewide systematic selection bias by police officers in the arrests that they make or prosecutors in who they charge or what charges they file. While police officers and prosecutors have the discretion, there has been no indication or evidence of any type of bias that varies by jurisdiction. Finally, instrumentation, as most generally defined, is also not an issue as there have been no recent major changes in the reporting or categories of the Pennsylvania Uniform Crime Report. However, there is a potential issue that may be considered as a form of instrumentation threat, which is the actual implementation of the law. If the law has not been or is not being implemented as originally intended then that could raise some issues with internal validity. If any issues existed, such as heightened focus on certain crimes at the onset of the law, this may be manifested as a temporary decrease in the rates of the crimes that Megan's Law targets. Or if there were, for example, resource allocations issues that somehow hampered the full implementation of the law then we might see a watering down effect of the impact. However, in reviewing the literature and various sources on Megan's Law, there do not appear to have been any significant issues with its implementation.

While the preceding possible threats generally are not salient to the current study, there is a threat to internal validity which is salient, history. History could be a threat to validity as there may be some other event(s) that occurred around the passage and/or subsequent revision of Megan's law that could have influenced the crime rates and thereby changes (in part or in whole) may be falsely attributed to passage of the law. In order to control for the historical threat to internal validity, ITS designs included, as nonequivalent dependent variables, violent crimes

(murder of an individual 15 and over, aggravated assault, and robbery) that would not warrant registration. Including nonequivalent dependent variables allows for the researcher to make statements about the strength and weakness of the effect of the independent variable on the dependent variables (Shadish et al., 2002). The inclusion of these violent crimes, which theoretically Megan's Law should not have affected the rates of, will allow for a control for historical effects and for more certain assertions to be made about the strength of the model. If there are changes in these offenses then questions will be raised about whether there were some factors (other than Megan's Law) operating that more generally affected the crime rates.

### **Construct validity**

Construct validity is the ability to make inferences from the operationalizations used in the study to the theoretical constructs used to describe those operations (Shadish et al., 2002). Shadish et al. (2002) outline fourteen potential threats to construct validity. Of these, only one seems to be a salient threat in the current study. That threat is mono-method bias. Principally, using only one method to measure constructs may influence the results. In the current research, the method used is an ITS design utilizing crime rates from the Pennsylvania Uniform Crime Report. Using just this method only produced numerical results based upon the information that is known to law enforcement and reported to the Uniform Crime Report. Using another method or additional methods could reveal that there may be other information about the effectiveness of Megan's Law. While this is a potentially salient threat, given that the stated purpose of the law was to reduce the identified target offenses and given that one widely accepted measure for offenses committed is official crime statistics, it can be argued that this method gives a reasonable assessment of the impact of the law. However, it is true that some of the offenses

targeted may be underreported to police, and the potential impact of this will be addressed as part of the discussion of the results and implications of this study.

### **External validity**

External validity applies to the inferences that can be made regarding whether causal connections hold over various persons, treatments or settings (Shadish et al., 2002). Shadish et al. (2002) identify five potential threats to external validity. Only one, interactions of causal relationship with settings, applies to the current research examining the effectiveness of Megan's Law in Pennsylvania. The effect that may be seen in Pennsylvania regarding the implementation of Megan's Law may not be seen in other states. There may not be generalizability from Pennsylvania to other states. However, there are published results from similar studies conducted in other states and the results from current study will be compared and contrasted with the results of these other studies, as an assessment of potential generalizability/external validity.

Past research which has examined Megan's Law on the state level using time series data have seen mixed results. There have been three previous studies to examine the effectiveness of Megan's Law by assessing crime rates on the state level. Sandler et al., (2008) examined New York State's sex offender registration and notification law, Vasquez et al., (2008) assessed sex offender registration and notification laws in ten states (Arkansas, California, Connecticut, Hawaii, Idaho, Nebraska, Nevada, Ohio, Oklahoma and West Virginia) and Letourneau et al. (2010) examined South Carolina's version of Megan's Law.

Also, the current study examined urban versus rural areas. This allows for conclusions to be drawn regarding the effectiveness of Megan's Law on a smaller level versus the just the entire state. Past research has suggested that there may be differences in crime rates based on geographic area (Sandler et al., 2008) or city level as opposed just examining the state level

(Vasquez et al., 2008). Examining urban areas as well as rural areas within the state of Pennsylvania revealed differences and/or variations in the effectiveness of Megan's Law within the state.

## CHAPTER V

### ANALYSIS

In order to assess the effectiveness of Megan's Law in the state of Pennsylvania, this research utilized quantitative data. Both yearly and monthly crime rates as reported to the Pennsylvania Uniform Crime Report were analyzed. Two types of statistical methods, ARIMA and OLS regression, were used to determine the impact of Megan's Law on the outcome and control variables. This chapter will describe and explain the analysis process and results of this study. First, a discussion of Interrupted-Times Design Analysis and ARIMA modeling is presented, followed by a step-by-step example of the ARIMA process as illustrated with a variable from the current study. Finally, the results of all of the models are presented and discussed.

#### **Interrupted Time-Series Design Analysis**

##### **Analysis Method**

There are three methods for evaluating the changes in an ITS design: 1) visual inspection; 2) regression analysis; and 3) ARIMA – autoregressive (AR), integrated (I), moving average (MA) models. In this study, both ARIMA and regression analysis were used, with ARIMA being the primary method utilized. To decide which method should be used, the variables were initially run in OLS (Ordinary Least Squares) to determine if autocorrelation existed. If autocorrelation existed and the Durbin-Watson score fell above or below the values of 1.500 and 2.500, then ARIMA modeling was used for that variable. A majority of the variables did show autocorrelation and ARIMA was deemed the more appropriate means of analysis. For those variables that did not show autocorrelation, OLS was used. In OLS it is assumed that there is



linearity, no specification error and that autocorrelation is not present. The formula that is used is  $\hat{y} = a_1 + b_1 + X$  (Lewis-Beck, 1980).

In OLS, the assumption is that the error terms for observations are not correlated (Lewis-Beck, 1980; Shadish et al., 2002). However, with time-series analysis, this assumption cannot always be asserted as true. In time-series data, observations have a greater likelihood of being correlated and the correlation can extend beyond directly sequential observations and into the larger series (McDowall et., 1980). Autocorrelation can cause the  $t$  statistic to increase. Failing to control for autocorrelation in the data can cause the  $t$  statistic to be increased by up to 400 percent (McDowall et al., 1980; Ostrom, 1990). Since autocorrelation was present in a majority of the data, ARIMA modeling was used as a result, as it is a solution to an autocorrelation problem in time-series data. In cases in which autocorrelation is present, ARIMA modeling is a more appropriate measure than other types of regression as it can more accurately decipher the changes that occur in the pre and post intervention examinations (McDowall et al., 1980). ARIMA modeling, which utilizes the formula  $Y_t = N_t + I_t$ , was used for most of the variables in this study as a result of autocorrelation being present.

ARIMA modeling aims to eradicate systematic error and create trends (Mohr, 1988). ARIMA modeling uses the disturbance term itself as the independent variable, whereas regression analysis relies upon another independent variable to account for the error that exists in the data (McDowall et al., 1980). ARIMA modeling is based upon the theory that a random shock ( $a_t$ ) goes through a sequence of filters ( $p, d, q$ ) and those filters control for autoregression ( $p$ ), differencing ( $d$ ), and moving average ( $q$ ), and then finally the random shock leaves the filters as a time-series observation ( $Y_t$ ) (McDowall et al, 1980). Also in utilizing ARIMA modeling, seasonality can be controlled for ( $p, d, q$ ) ( $P, D, Q$ ). In this case, the random shock goes through

further filters. These further filters control for seasonal autoregression (P), seasonal differencing (D), and a seasonal moving average (Q) (McDowall et al., 1980). In order to know which ARIMA model is suitable, the autocorrelation function (ACF) and partial autocorrelation (PACF) graph is examined from the observations in the time-series data. A visual inspection of the ACF and PACF are often the principal way to discover the type of ARIMA model that would be best to use and also whether the time-series contains white noise (random error) and whether the series is flat or moving up and down (Mohr, 1988).

It is important in the use of ARIMA modeling that there be an adequate number of pre and post observations in order to correctly control for autocorrelation and also to create a correct pattern of systematic error. In the current study, there are 22 pre-treatment yearly observations for the initial implementation of Megan's Law on April 26, 1996 and 14 years post treatment. Although, one hundred total observations are considered to be desirable for use in time series projects, a lesser number of observations may be used and models can still be adequately identified (Shadish et al., 2002). For the subsequent revision of Megan's law on November 24, 2004, in which all information regarding registered sex offenders would be made available to the public via the Internet, there are 47 monthly pre-treatment data points 73 monthly post-treatment observations. The number of pre and post-treatment observations is a sufficient number of observations for the use of ARIMA modeling.

### **Model Construction**

In order to create a model in ARIMA, there are three steps, or phases. The first is identification, followed by estimation and finally diagnosis (SPSS *Trends* 10.0). These steps must be done in order and following a correct procedure in order to have an accurate model using ARIMA.

## Identification

In the first phase, identification, the three integers  $p$ ,  $d$ , and  $q$  in the ARIMA ( $p$ ,  $d$ ,  $q$ ) process must be determined in creating the series. In order to determine this, a visual inspection of plots and graphs must be conducted. Plotted observations, as well as the PACF (partial autocorrelation function) and ACF (autocorrelation function) of a model are visually examined. In this examination, it is necessary to determine whether the data indicate a stochastic process. If the data are not found to be stochastic, suggesting that differencing at either the monthly or seasonal level is required, it must be differenced ( $d$ ,) in order to identify the MA or AR process. Differencing the data occurs when each value in the series is replaced by the difference between the current value and the previous value. Once a stochastic process is achieved, the autoregression ( $p$ ) and moving average ( $q$ ) can be identified at this point by visually examining the PACF and ACF for the error term or residual of the series (SPSS *Trends* 10.0).

In order to identify the AR ( $p$ ) models or the MA ( $q$ ) models, the ACF and PACF must be examined. These graphs contain indicators as to which is the most appropriate choice for the time-series data at hand. AR ( $p$ ) processes have exponentially declining values on the ACF, with the possibility of positive and negative values alternating on each side of the confidence interval. If there is only the first spike outside of the confidence interval on the PACF, it would indicate that is an AR (1) process. Two spikes initially outside the confidence interval on the PACF suggest an AR (2) process. This is the process in identifying further AR processes, such as AR3 or AR4 as well. However, in the social sciences, it is not common to see an AR or M A process beyond an AR (2) or MA (2) (SPSS *Trends* 10.0).

An MA ( $q$ ) processes is identified by the presence of spikes in the first values in the confidence intervals on the ACF and exponentially declining values in the PACF. If there is only

the first spike outside the confidence interval on the ACF, it would be a MA (1) process. If the first two spikes were outside the confidence interval on the ACF, it would be a MA (2) process. This would be the case for further MA processes as well. Mixed AR (p) and MA (q) models have more complex ACF and PACF graphs and identifying them can be more difficult and can take additional identification-estimation and diagnosis cycles (SPSS *Trends* 10.0).

In clarification, examining the plots of an ACF and PACF permits a starting point for the researcher in model identification. This first step allows the researcher to determine whether it is an AR or MA process. This is important as the determination of the type of process, whether it is an MA or AR process, influences the following two steps of estimation and diagnosis.

### **Estimation**

After the initial model identification, the estimation of the model is required. The estimation part of the process requires a software package that is equipped to deal with ARIMA modeling and its nonlinear parameters (McDowall et al., 1980). SPSS *Trends* is the appropriate statistical software package to use. It has the capability to estimate the coefficients of an identified ARIMA model. The maximum-likelihood coefficients are calculated and evaluated for the model and serve as a means to identify the quality of the model. Based on the model, SPSS *Trends* generates a regression model similar to OLS. In this model the following are supplied: the predicted value; residuals (error); the slope; upper and lower confidence intervals and the standard error of fit (SPSS *Trends* 10.0).

In estimation, the researcher must be concerned with two criteria. First, whether the parameter estimates must fall within stationarity and/or invertibility for either an AR or MA parameter. Second, the parameter estimates must be statistically significant. An examination of ACF and PACF of the residuals of the model will show whether it is significant and also reveal if

it is the AR or MA process as identified. If a parameter estimate does not meet both of these criteria, a new model must be identified and then subsequently estimated (McDowall et.al, 1980).

The estimation step of the ARIMA process is important as it allows the researcher to know whether they have identified and subsequently estimated a model correctly. If a model has not been identified correctly, the estimation step will reveal that and allow the researcher to identify the model again so that they can then accurately diagnose the model.

### **Diagnosis**

The final step in ARIMA modeling is to diagnose the model. This part of the process focuses on finding the best ARIMA model for the time series data at hand. The ACF and PACF graph of the error series, or residuals from the tentative model, should be within the upper and lower levels of the confidence intervals. There may be one or two spikes that stick out from these limits, but if there are spikes that extend beyond the confidence interval at the first few observations, the model is probably misspecified, in other words, you have the wrong model for your variable. ARIMA will add the error or residuals as a new series, and examining the ACF and PACF may also indicate a problem with the model. The residuals should not have a pattern. The residuals should just be white noise. Additional measures to determine the right model are offered in SPSS. These include the Akaike information Criterion (AIC), Schwarz Bayesian (SBC), Log Likelihood, Box-Ljung  $Q$  statistic and t-values for each  $p$  and  $q$  in the model. The t-value will also reveal if there is over specification in a model, as it will be insignificant and therefore the limitation should be removed from the model. The PACFs and ACFs can expose an under specified model as well as an over specified model. If the model is underspecified, the

residuals on both the PACFs and ACFs will be outside the confidence intervals (SPSS *Trends* 10.0).

The final step in the diagnosis of ARIMA models is to see if in the AR process that  $\phi$  remains within the limits and is stationary for the MA process, with  $\theta$  remaining within the bounds of invertibility (McDowall et al., 1980). ARIMA models that have unstandardized coefficients for an  $AR_1$  and  $MA_1$  that are outside of this  $-1 < \phi_1 < 1$  and  $-1 < \theta_1 < 1$  are improperly specified models (McDowall et al., 1980).

### **Data Analysis**

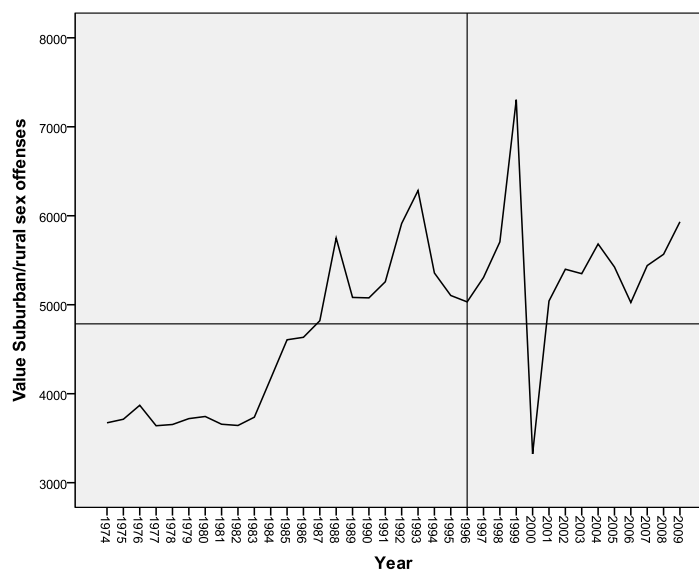
Both ARIMA modeling and OLS regression was used in the data analysis for the current study. There were two data sets utilized, which consisted of both monthly and annual UCR reported offenses for the state of Pennsylvania. The annual data set ranges from 1974 - 2009. The monthly data set includes years 2001-2010. The annual data set was used to examine the effectiveness of the first iteration of Megan's Law which was passed on April 21, 1996 and will be referred to as the original in this chapter. The monthly data set was used to examine the effectiveness of the revision of Megan's Law on November 24, 2004 to include an online registry. This will be referred to as the revised. In this section, an example of one of the models in the study which used ARIMA will be presented in detail, to serve as illustration for that analytic technique. Then the results of additional variables will be presented and discussed of both the OLS regression and ARIMA modeling.

#### **The effectiveness of the original Megan's Law (April 21, 1996): Suburban/rural sex offenses**

Using the variable of interest suburban/rural sex offenses from the annual data set as an example, a step by step process for ARIMA modeling will be presented. Evaluations of

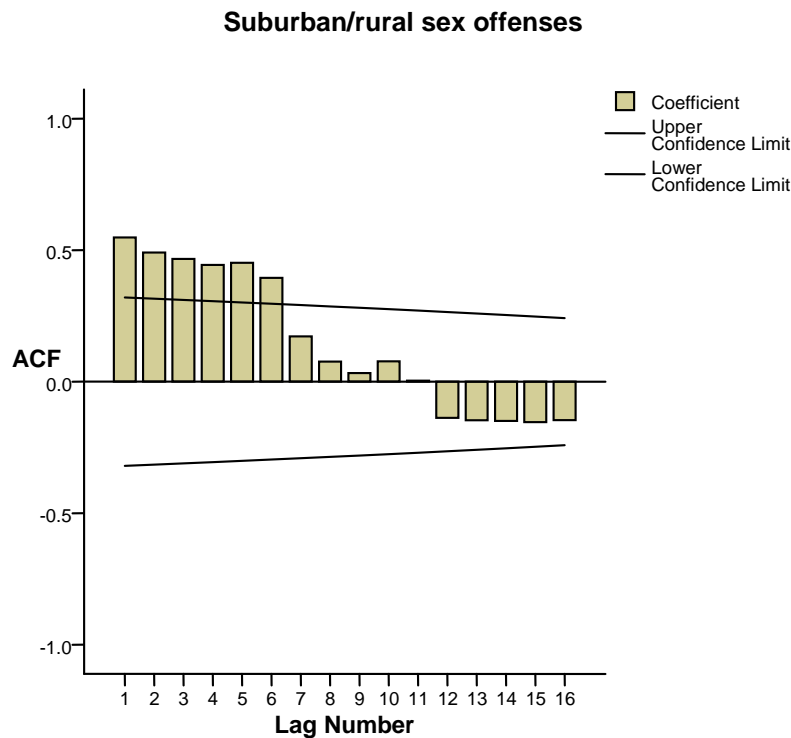
subsequent models that will be presented will not include model identification, estimation and diagnosis as well as the statistical analysis for the model. All variables will be presented on three major tables and discussed generally later in this chapter. Figure 1 (below) displays a sequence plot of annual suburban/rural sex offenses. The vertical line represents where the Megan's Law went into effect, April 26, 1996. As this is yearly data and cannot be disaggregated by month and Megan's Law took effect in the earlier part of the year, the vertical line is placed at 1996. The horizontal line is the mean (4850.97) of the series.

Figure 1 indicates a fairly stochastic process. A visual inspection reveals that the line is moving around a common mean value, with only one real dramatic change. Reported offenses increased steadily and leveled off, with a sharp drop in the year 2000, followed by an increase and a steady trend in the series. Since the series is stochastic, there is no need for differencing. Most of the models analyzed in this study did not require differencing. However, a differencing discussion will be provided when necessary in explaining variables that required differencing later in the chapter



*Figure 1.*  
Sequence plot of suburban/rural sex offenses

Figure 2 (below) indicates that the ACF has declining values, with spikes outside the confidence interval. There are both positive and negative values. Figure 3 shows that there is a spike in the first P value and that there are both negative and positive values on the PACF. With the exception of the first spike, no other value goes above or below the confidence interval. An examination of the ACF and PACF indicate that this model is an AR 1 process  $(1, 0, 0)$   $(0, 0, 0)$ , particularly by the emerging first spike on the PACF. Figure 4 and 5 (below) show the ACF and PACF of the error terms (residuals) for the ARIMA model  $(1, 0, 0)$   $(0, 0, 0)$ . They indicate the correct ARIMA process is indeed  $(1, 0, 0)$   $(0, 0, 0)$ .



*Figure 2.*  
ACF Suburban/rural sex offenses



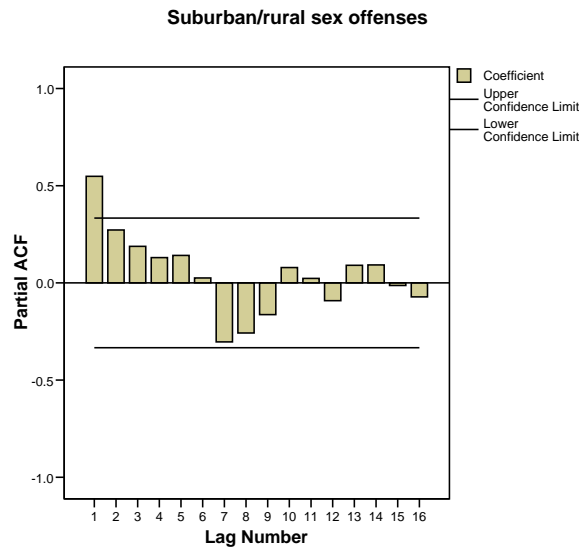


Figure 3.  
PACF suburban/rural sex offenses

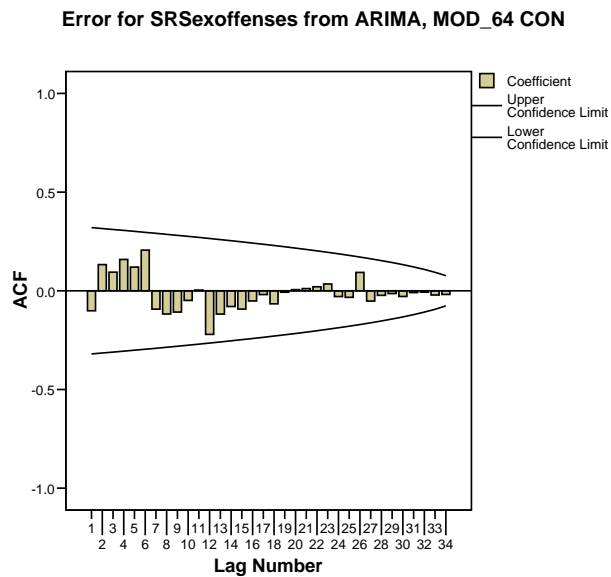


Figure 4.  
ACF for suburban/rural sex offenses ARIMA Model (1, 0, 0) (1, 0, 0)

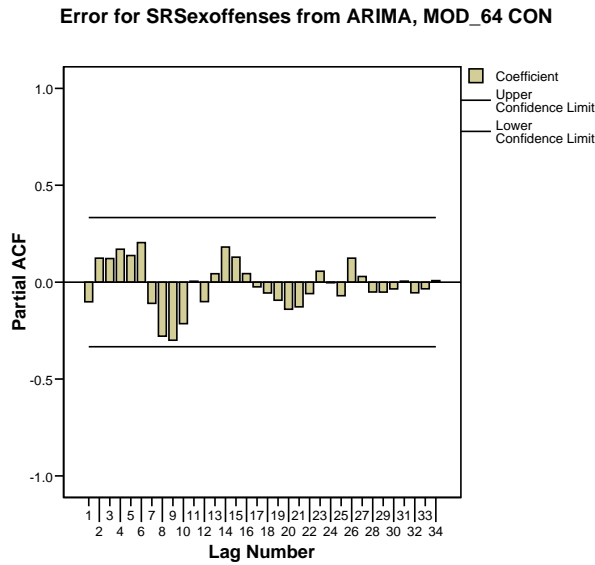


Figure 5.

PACF for suburban/rural sex offenses ARIMA Model (1, 0, 0) (1, 0, 0)

Table 1 displays the regression output for the ARIMA model for the variable: suburban/rural sex offenses. Table 1 shows that the value of  $\theta$  is .44646 ( $p < .000$ ), which is within the limits of invertibility ( $-1 < \theta < 1$ ). This model shows that the current observation equals a random shock minus .44646 of the previous year's random shock.

This model indicates that reported sex offenses in suburban and rural areas in the state of Pennsylvania increased an average of 806.53 offenses per year after the initial implementation of Megan's Law on April 26, 1996. Although, this is not a statistically significant increase, it is approaching significance at the .005 level with a significance score of .007. This finding is not what would be expected regarding the effectiveness of Megan's Law. One would imagine that if Megan's Law had been effective in Pennsylvania, sex offenses would have decreased not increased. However, due to the fact that the initial implementation of Megan's Law required sex

MODEL: (1, 0, 0) (0, 0, 0)

Variable: SRSexoffenses

Regressors: enactment	.680	.124	4.548	.000
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Non-seasonal differencing: 0

No seasonal component in model.

Iteration History:

Iteration	Adj. Sum of Squares	Marquardt Constant
1	19754243.8	.00100000.

FINAL PARAMETERS:

Number of residuals 36

Standard error 771.31596

Log likelihood -289.01552

AIC 584.03104

SBC 588.7816

Analysis of Variance:

	DF	Adj. Sum of Squares	Residual Variance
Residuals	33	19754242.3	594928.31

Variables in the Model:

	B	SEB	T-RATIO	APPROX. PROB.
AR1	.44646	.15591	2.863644	.00722560
enactment	806.53392	431.35806	1.869755	.07041216
CONSTANT	4531.39800	283.64637	15.975519	.00000000

Table 1

*SPSS Time Series regression output for the original version of Megan's Law suburban/rural sex offenses ARIMA model (1, 0, 0) (0, 0, 0)*

## **Dependent variables**

There were additional dependent variables other than suburban/rural sex offenses (discussed above) which were analyzed to determine the effectiveness of the original version of Megan's Law: urban rape; suburban/rural rape; and urban sex offenses. As indicated previously, these data were drawn from the Pennsylvania annual UCR. The findings of each variable are discussed below. It should be reiterated that the data on urban, suburban/rural rape and urban sex offenses were available only in annual form for the time periods relating to the original implementation of Megan's Law. Table 2 (below) presents the results of both the ARIMA modeling and OLS analyses for using urban and suburban/rural rape as the dependent variables.

### **Urban and suburban/rural rape**

Urban rape was modeled as an AR1 process (1, 0, 0) (0, 0, 0). It was anticipated that urban rape would be affected by the initial implementation of Megan's Law, as it was an offense the law sought to reduce. In this study, urban rape was found to have decreased an average of 76.019 reported rapes per year. It was not statistically significant (.280). The fact that rape in urban areas in the state of Pennsylvania decreased, though not at a statistically significant rate, could be used as evidence that the initial implementation of Megan's Law was effective in reducing rape in urban areas. However, it could also be that violent crime was decreasing on a wider scale as has been the case with much urban crime (Levitt, 2004; Uniform Crime Report, 2010) and is also evidenced in this study with a decrease in other urban crimes (murder and robbery) which will be discussed later in this chapter. Violent crime has been decreasing on the national level as well (Bureau of Justice Statistics, 2011; Uniform Crime Report, 2010). Therefore, it is possible that the reduction in rates that was seen in this study could be part of a larger trend.

Table 2.

*The effectiveness of the original version of Megan's Law: Dependent variables*

<b>Urban rape (1,00) (0,0,0)</b>	<b>B</b>	<b>SE</b>	<b>t</b>	<b>Sig</b>
AR1	.439	.154	2.843	.007
Enactment	-76.019	69.348	-1.09	.280
CONSTANT	1264.147	45.526	27.767	.000
<b>Suburban/rural rape OLS (R<sup>2</sup>=.291)</b>				
Enactment	597.078	159.078	3.739	.001***
CONSTANT	1330.636	99.592	13.361	.000
<b>Urban sex offenses (1,0,0) (0,0,0)</b>				
AR1	.700	.115	6.080	.000
Enactment	196.724	198.002	.993	.328
CONSTANT	1959.204	152.838	12.838	.000
<b>Suburban/rural sex offenses (1,0,0) (0,0,0)</b>				
AR1	.446	.155	2.864	.007
Enactment	806.534	431.358	1.867	.070
CONSTANT	4531.398	283.647	15.976	.000

\*P <.05   \*\*P <.01   \*\*\*P < .001

Suburban/rural rape, also a type of offense thought to be affected by Megan's Law, was modeled using OLS as its Durbin-Watson score was within the limits and did not display autocorrelation. After Megan's Law went into effect in 1996, there was an average increase of 597.078 reported rapes per year in suburban/rural areas in Pennsylvania. This finding was statistically significant (.001). Once again, this is not what would be expected of an effective piece of legislation aimed at reducing and preventing sex crimes. Crime was not reduced, but rather increased. However, as was previously mentioned in regards to suburban/rural sex offenses, there could have been an increased awareness regarding sex offenders and sex offenses as a result of Megan's Law implementation in Pennsylvania which led to an increase in reporting.

### **Urban sex offenses**

The next variables of interest thought to be affected by the implementation of Megan's Law were annual urban sex offenses. This variable was modeled as an AR 1 process (1, 0, 0) (0, 0, 0) as its Durbin-Watson score indicated autocorrelation. On average, sex offenses in urban areas in the state of Pennsylvania increased by 196.724 per year. This finding was not statistically significant (.328) and does not suggest success of Megan's Law in the conventional terms, as sex offenses increased, not decreased. Once again, it may be that the awareness of sex offenders and sexual offenses prompted more citizens to report crimes to the police. This issue will be more thoroughly examined in the discussion chapter.

### **Nonequivalent dependent variables**

In addition to the dependent variables of interest in the study, several nonequivalent dependent variables were analyzed from the same set to aid in the interpretation of the findings relating to the impact of Megan's Law. As nonequivalent dependant variables, it would be expected that they would or should not to be affected by the initial implementation of the law. These variables include: urban murder; suburban/rural murder; urban aggravated assault; suburban/rural aggravated assault; urban robbery and suburban/rural robbery. Table 3 displays the results of the analysis of the original version of Megan's Law on the nonequivalent dependent variables.

Table 3.

*The effectiveness of the original version of Megan's Law: Nonequivalent dependent variables*

Variable	B	SE	t	Sig.
<b>Urban murder (1,0,0) (0,0,0)</b>				
AR1	.680	.124	5.475	.000
Enactment	-37.102	35.950	-1.032	.309
CONSTANT	460.373	27.045	17.022	.000
<b>Suburban/rural murder (1,0,0) (0,0,0)</b>				
AR1	.335	.167	2.01	.053
Enactment	-17.753	12.952	-1.37	.180
CONSTANT	249.392	8.317	29.984	.000
<b>Urban aggravated assault (1,0,0) (0,0,0)</b>				
AR1	.850	.081	10.408	.000
Enactment	969.034	1125.083	.618	.540
CONSTANT	9613.771	1241.05	7.74	.000
<b>Suburban/rural aggravated assault (1,0,0) (0,0,0)</b>				
AR1	.512	.149	3.45	.002
Enactment	2853.67	2443.80	1.17	.251
CONSTANT	10223.183	1642.45	6.22	.000
<b>Urban robbery OLS (R<sup>2</sup>=.191)</b>				
Enactment	-1316.708	886.053	-1.486	.146
CONSTANT	14067.636	553.551	6.818	.000
<b>Suburban/rural robbery OLS (R<sup>2</sup>=.032)</b>				
Enactment	1154.299	1096.981	1.052	.300
CONSTANT	4663.773	684.088	6.818	.000

\*P <.05    \*\*P <.01    \*\*\*P < .001

### Urban and suburban/rural murder

Urban murder and suburban/ rural murder were both modeled using an AR1 process (1, 0, 0) (0, 0, 0). In urban areas, reported murder decreased an average of 37.102 murders per year. However, the decrease was not statistically significant (.309). Murder in suburban/rural areas decreased by 17.753 on average per year and was not statistically significant (.180). Murder alone was not a crime targeted by Megan's Law and therefore the initial passage of Megan's Law (April 21, 1996) should not have had any effect on the reported rates for murder in either

urban or suburban/rural areas. However, the fact that murder did decrease after the legislative enactment may be related to a larger trend of decreasing violent crime in general (Uniform Crime Report, 2010; Bureau of Justice Statistics, 2011).

### **Urban and suburban/rural aggravated assault**

Urban aggravated assault and suburban/rural aggravated assault were both modeled using an AR1 process (1, 0, 0) (0, 0, 0). After Megan's Law was implemented, aggravated assault in urban areas increased by 969.034 on average per year, but was not statistically significant (.540). Suburban/rural aggravated assault increased 2853.67 on average per year and also was not statistically significant (.251). These variables, while serious violent crimes, were not thought to be affected by the implementation of Megan's Law as the law targeted sex crimes and not violent crime in general. The increase in reported aggravated assaults in both urban and rural/suburban areas could be related to another phenomenon pertaining to violent crime in the state of Pennsylvania.

### **Urban and suburban/rural robbery**

The variables urban as well as suburban/rural robbery was modeled using OLS as they did not display autocorrelation. Robbery in urban areas decreased on average by 1316.708 per year. The change was not statistically significant (.146). Suburban/rural robbery increased 1154.299 on average per year after the initial implementation of Megan's Law. The increase was not statistically significant (.300). This crime was not hypothesized to change as a result of the passage of Megan's Law. The fact that there was a decrease in reported robberies in urban areas in Pennsylvania may be related to a decline in urban crime more generally. The increase of reported robberies in suburban/rural areas in the state once again may be related to another issue



or trend in crime, such as more people moving out of the urban area and into the suburban/rural areas or economic issues.

### **Murder and rape disaggregated by age**

In addition to the variables just discussed, additional variables were analyzed from the annual data set to further gauge the effectiveness of the original version of Megan's Law. As Megan's Law seeks to prevent and reduce the number of crimes committed against children, variables (murder and rape) that were able to be disaggregated by age of the victim were also included. In using UCR annual data, murder is separated based on the age of 14. The variables for murder, therefore, are murder 14 and under and murder 15 and over. Megan's Law was passed as a result of the rape and murder of a child, Megan Kanka, and it aims to reduce child sexual murder committed by pedophiles. As a result, the variable of interest in this study is murder of an individual 14 and under. Murder 15 and over will serve as a nonequivalent dependent variable. The reason being that murder of an individual 15 and over would fall into a different category of offender than that in which this legislation is principally targeting. Megan's Law is aimed at offenders who harm young children, principally those who rape and murder children, individuals who have not reached puberty. Pedophiles are those who are sexually attracted to pre-pubescent children, offenders who would murder those 15 and over would fall into the category of hebephile, those which are sexually attracted to post-pubescent children. In addition, the majority of the cases included in the category of murder for 15 and over is adult murder and not the murder of teens and those under the age of 18.

In addition to murder, rape can also be disaggregated by age in the Pennsylvania Uniform Crime Report annual data. Rape, as disaggregated by age is of particular interest in this study. Megan's Law was passed to prevent other children from meeting the same fate of Megan Kanka,

ultimately to prevent the rape and murder of children by sex offenders. Rape of an individual under the age of 18 will serve as a dependent variable. In addition, rape of an individual over the age of 18 will also be examined as a variable of interest as Megan's Law also requires registration of those who commit rape of an adult and seeks to prevent rape of individuals of all ages in addition to the rape of children.

Murder and rape by age categories were only found in the annual data beginning with the year 1985. This was when Pennsylvania first began disaggregating the data for these crimes based on age. Also, these crimes are not available in monthly data. The impact of Megan's Law was examined on these variables using both the original version of Megan's Law (April 21, 1996) and its revision (November 24, 2004). As monthly data do not exist for these variables, they could not be analyzed separately based on the original or revision of Megan's Law as the other variables were. The impact of both versions of Megan's Law was examined for these variables using only the annual Pennsylvania Uniform Crime Report data. The results for these variables are displayed in Table 4.

### **Murder victims by age**

Murder of individuals 14 and under was modeled as an AR1 process (1, 0, 0) (0, 0, 0). For the first enactment, the initial passage of Megan's Law (April 21, 1996), murder for those 14 and under decreased on average of 11.124 murders per year and was statistically significant (.002). After the second enactment, in which Megan's Law was revised to include an Internet registry (November 24, 2004) murder of individuals 14 and under decreased by 3.001 murders on average per year, but was not found to be statistically significant (.488). Each implementation of Megan's Law, both in 1996 and 2004, lowered the murder rates for individuals 14 and under. As a result of these findings, Megan's Law could be thought of effective in reducing the number

of children murdered in the state of Pennsylvania. However, there could be other factors that influenced this rate in addition to Megan's Law, which will be discussed later in this chapter and in the final chapter.

Table 4.  
*Murder and rape victims by age*

<b>Variable</b>	<b>B</b>	<b>SE</b>	<b>t</b>	<b>Sig.</b>
<b>Murder 14 and under</b> (1,0,0), (0,0,0)				
AR1	.356	.166	2.15	.039
Enactment	-11.124	3.26	-3.415	.002**
Enactment 2	-3.001	4.29	-.701	.488
CONSTANT	47.801	1.87	25.613	.000
<b>Murder 15 and over</b> (1,0,0), (0,0,0)				
AR1	.591	.140	4.212	.000
Enactment	-77.341	43.541	-1.78	.085
Enactment2	108.502	52.261	2.07	.046*
CONSTANT	656.802	28.455	23.082	.000
<b>Rape over 18</b> (1,00), (0,0,0)				
AR1	.694	.149	4.659	.000
Enactment	76.283	111.243	.686	.500
Enactment 2	128.450	118.873	1.08	.292
CONSTANT	1672.153	97.871	17.085	.000
<b>Rape under 18</b> (1,0,0), (0,0,0)				
AR1	.944	.058	16.320	.000
Enactment	44.610	81.723	.546	.590
Enactment 2	-8.16	81.840	-.090	.921
CONSTANT	1250.744	197.140	6.34	.000

\*P <.05 \*\*P <.01 \*\*\*P < .001

Murder of individuals 15 and over was also modeled as an AR1 process (1, 0, 0) (0, 0, 0). At the first enactment, murder decreased by 77.341 on average per year, but was not statistically significant (.085). After the second enactment, murder increased an average of 108.502 per year and was statistically significant (.046). This variable was not thought to be impacted by Megan's Law and the decrease and then subsequent increase may not be attributable to this legislation, but other influences.

### **Rape victims by age**

Rape of individuals over and under 18 were both modeled using an AR 1 process (1, 0, 0) (0, 0, 0). Rape of individuals over the age of 18 increased on average by 76. 283 reported rapes per year at the first enactment and also increased at a rate of 128.540 reported rapes per year after the second enactment. Neither finding was statistically significant (.500) and (.292). As with the other findings, an increase in rape is not thought of as effectiveness pertaining to Megan's Law. However, it could have been the case that there was an increased awareness of sex offenders' presence in the community that led to more reporting of crime. Also, there could have been a greater knowledge on the part of the public as a result of Megan's Law about what constitutes a sex offense which led to more reporting and an increase in rates.

Rape of individuals under the age of 18 increased by 44.610 reported rapes per year after the initial implementation of Megan's Law and decreased by 8.16 reported rapes per year after the revision of Megan's Law. Neither the first enactment (.590) nor the second (.921) were found to be statistically significant. The fact that there was an initial increase in the reported rapes of those under the age of 18 may be attributed once again the awareness of the public about sex offenses and offenders in the area. After the creation and establishment of an online registry in Pennsylvania, there was a decrease in offenses. The birth of the online registry may have aided in

preventing crime as relating to the tenets of Routine Activities Theory. An online registry, easily accessible by a great deal of the public, means that more citizens have access to information pertaining to the sex offenders that lived in their communities than with the past implementation of Megan's Law. The registry allowed individuals to know exactly where the sex offenders were living and provided them with a photo that was literally only a click away on the Internet. This means that parents could keep their children away from those on the website during the course of their daily, routine activities, thereby reducing the crime rates for the rape of individuals under the age of 18 in Pennsylvania. In addition, the new addition of the registry may also have perhaps been a deterrent for sex offenders. They avoided offending so that they would not face the stigma of being included in the online registry.

### **The effectiveness of the revision of Megan's Law**

Finally, the effectiveness of the revised version of Megan's Law (November 24, 2004) in Pennsylvania to include an online registry viewable by the public will be examined. Monthly data from the Pennsylvania UCR were available and was utilized to determine the impact that the revised law had on crime rates. In this analysis, monthly data were examined from 2001-2010. Table 5 (below) displays the results for the dependent variables and Table 6 (on page 30) shows the results for the nonequivalent dependent variables. Both tables show the results of the ARIMA and OLS analyses.

### **Dependent variables**

There were four main dependent variables in the monthly data set that were thought to be affected by the implementation of an online sex offender registry: urban and suburban/rural rape and urban and suburban/rural sex offenses. All of these variables were modeled using OLS as their Durbin-Watson score did not indicate autocorrelation to be present.

## Urban and suburban/rural rape

Table 5.

*The effectiveness of the revision of Megan's Law: Dependent variables*

<b>Urban rape</b> OLS ( $R^2=.003$ )	<b>B</b>	<b>SE</b>	<b><i>t</i></b>	<b>Sig</b>
Enactment	-2.001	3.451	-.580	.563
CONSTANT	101.043	2.691	37.543	.000
<b>Suburban/rural rape</b> OLS ( $R^2=.030$ )				
Enactment	14.605	7.688	1.900	.060
CONSTANT	172.340	5.996	28.740	.000
<b>Urban sex offenses</b> OLS ( $R^2=.191$ )				
Enactment	-88.090	16.712	-5.271	.000***
CONSTANT	282.830	13.035	21.698	.000
<b>Suburban/Rural sex offenses</b> OLS ( $R^2=.023$ )				
Enactment	35.527	21.123	1.682	.095
CONSTANT	479.021	16.475	29.076	.000

\*P <.05    \*\*P <.01    \*\*\*P < .001

Reported rapes in urban areas in Pennsylvania decreased, on average, of 2.001 per month, but the decrease was not found to be statistically significant (.563). The fact that rape decreased in urban areas may indicate that the revised Megan's Law was effective in reducing crime. It could also be part of a larger trend of reduction in violent crime for urban areas. Rape in suburban/rural areas increased by an average of 14.605 per month; this finding also was not statistically significant, but was approaching significance with a score of .060. The increase of rape in suburban/rural areas on the surface does not indicate that revision of Megan's Law to was effective in reducing or preventing crime. However, as stated earlier in regards to the findings on the effectiveness of the initial version of Megan's Law, there could be an increased awareness as a result of the creation of the online registry which lead to more reporting of sexual offenses, including rape.

### **Urban and suburban/rural sex offenses**

Reported urban sex offenses decreased by 89.090 on average per month after the implementation of the online registry component. This finding was also statistically significant (.000). As a result, it can be argued that addition of the online registry as part of Megan's Law has been effective in decreasing urban sex offenses as its goal is to prevent and reduce sexual crime. During the same time period, suburban/rural sex offenses in the state of Pennsylvania increased by 35.527 on average per month, but the increase was not statistically significant (.095). A detailed discussion of these findings is provided in the following chapter.

### **Nonequivalent dependent variables**

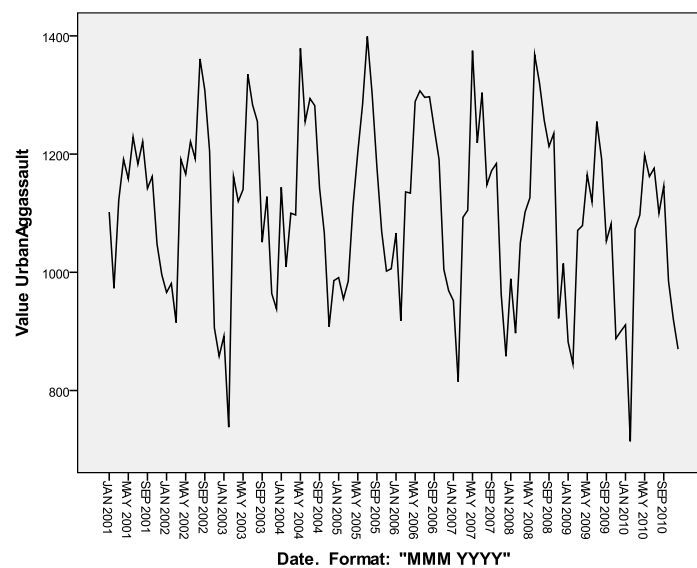
For the assessment of the revision of Megan's Law to include an online registry, nonequivalent dependent variables were included. These were variables that theoretically Megan's Law should have had no effect upon: urban and suburban/rural murder; urban and suburban rural aggravated assault; and urban and suburban/rural robbery. The results of these variables are displayed in Table 5.

### **Urban and suburban/rural murder**

Urban murder and suburban/rural murder were both modeled using OLS as their Durbin-Watson score indicated no presence of autocorrelation. On average, reported murders in urban areas increased by 4.404 per month after the revision of the law, and were statistically significant (.003). Reported murders in suburban/rural areas increased by 2.979 per month. This finding was not statistically significant (.063). Murder was not thought to be a violent crime that would be affected by the revision of Megan's Law, unless it was the murder of children.

## Urban aggravated assault

Urban aggravated assault was modeled using ARIMA as an SAR1 and SAR2 process  $(0, 1, 0) (2, 0, 0)_{12}$ . A visual inspection reveals that it was a non-stochastic process, as indicated by Figure 6 (below). It is apparent that there is a 12 month seasonal pattern, with a decrease seen in the month of January, which is typical in monthly crime data. It appears throughout the observations of the series. This seasonal pattern means that the current observation ( $Y_t$ ) is in part based upon the observation that occurred 12 months prior ( $t_{-12}$ ).



*Figure 6.*  
Sequence plot of urban aggravated assault.

In order to achieve a stochastic process, the observations must be differenced, as ARIMA modeling requires a stochastic process to address autocorrelation issues. A seasonal differencing component must be included. The data is differenced using SPSS *Trends*. Post differencing, the series then displays a stochastic process (See Figure 7) and each observation moves around the mean. A SAR1 and SAR2 have made the series stochastic. The ACF and PACF of the residuals indicate this is indeed the correct model for this variable (See Figure 8 and Figure 9).



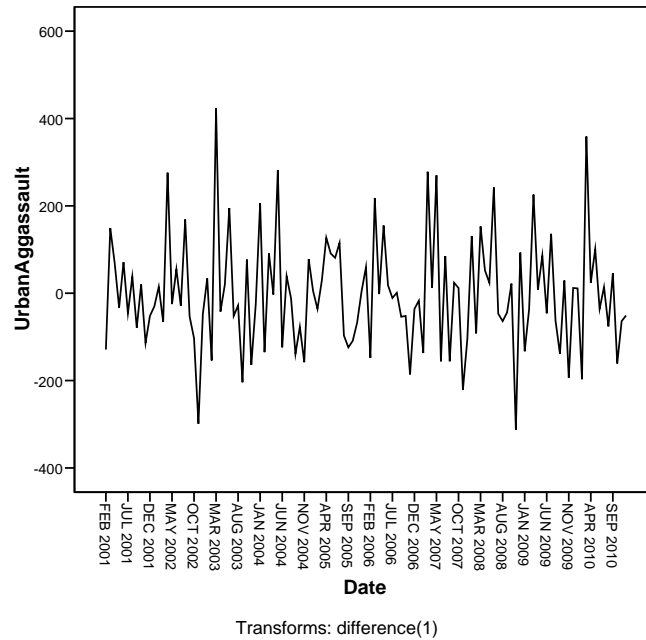


Figure 7.  
Sequence plot of urban aggravated assault

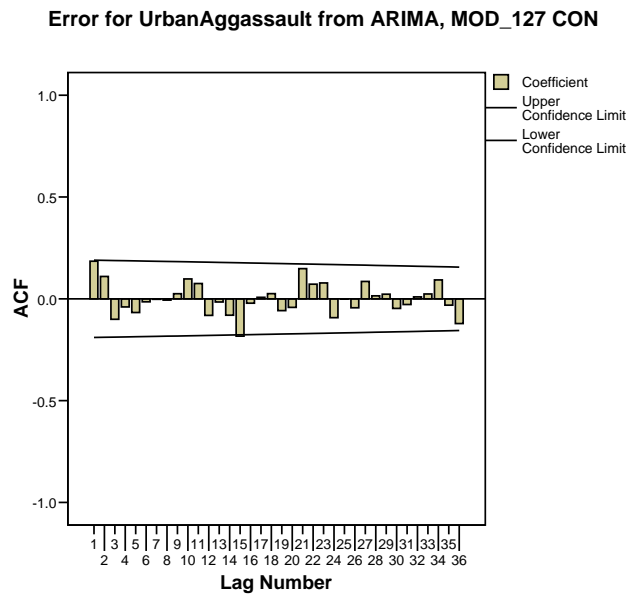
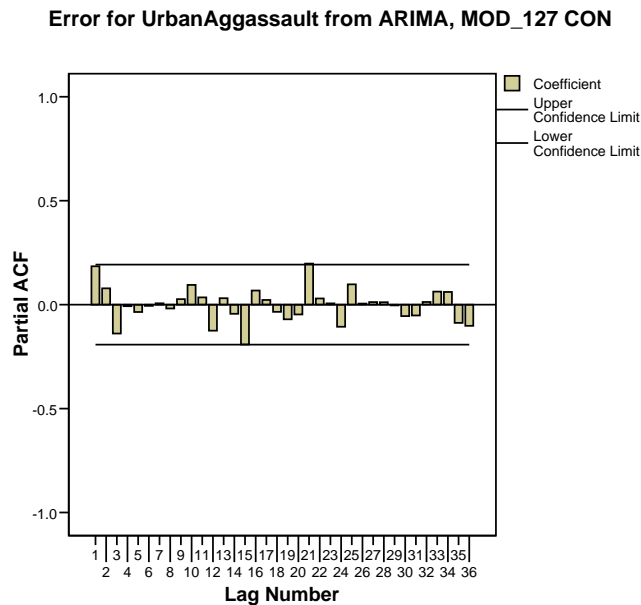


Figure 8.  
ACF for Urban aggravated assault ARIMA model  $(0, 1, 0) (2, 0, 0)_{12}$



*Figure 9.*

PACF for urban aggravated assault ARIMA model  $(0, 1, 0) (2, 0, 0)_{12}$

After the revision of Megan’s Law aggravated assault in urban areas in Pennsylvania increased an average of 73.865 per month and was statistically significant (.001). Aggravated assault in suburban rural areas was able to be modeled using OLS and it increased by 106.256 per month and was also statistically significant (.003). Both of these variables were not thought to be influenced by the creation of an online registry which the revision of Megan’s Law. The increase in both urban and suburban/rural areas for aggravated assault may be related to another trend in crime and not to effects of Megan’s Law implementation. The increase seen is contrary to the nation trend of a decrease in crime (Bureau of Justice Statistics, 2011).

### **Urban and suburban/rural robbery**

Urban robbery was modeled as an AR1 process  $(1, 0, 0) (0, 0, 0)$ . Robbery in urban areas decreased by 1330.69 on average per month, but was not statistically significant (.121). The decrease in robbery is unlikely attributable to Megan’s Law and the creation of an online

Table 6.

*The effectiveness of the revision of Megan's Law: Nonequivalent dependent variables*

<b>Urban murder</b> OLS ( $R^2=.071$ )	<b>B</b>	<b>SE</b>	<b>t</b>	<b>Sig</b>
Enactment	4.404	1.466	3.005	.003**
CONSTANT	34.404	1.143	30.094	.000
<b>Suburban/rural murder</b> OLS ( $R^2=.029$ )				
Enactment	2.979	1.589	1.875	.063
CONSTANT	20.021	1.239	16.154	.000
<b>Urban aggravated assault</b> (0,0,0) (2,0,0) <sub>12</sub>				
SAR1	-.835	.092	-9.097	.000
SAR2	-.432	.092	-4.687	.000
Enactment	73.865	21.086	3.502	.001***
CONSTANT	-17.586	4.67	-3.773	.000
<b>Suburban/rural aggravated assault</b> OLS ( $R^2=.073$ )				
Enactment	106.256	34.746	3.058	.003**
CONSTANT	1093.128	27.101	40.336	.000
<b>Urban robbery</b> (1,0,0) (0,0,0)				
AR1	-.077	.174	-.4424	.661
Enactment	-1330.69	837.58	-1.59	.121
CONSTANT	14077.49	520.77	27.03	.000
<b>Suburban/rural robbery</b> (1,0,0) (2,0,0)				
AR1	.185	.091	2.021	.045
SAR1	.178	.086	2.074	.040
Enactment	83.395	26.727	3.12	.002**
CONSTANT	484.910	23.356	20.761	.000

\*P <.05 \*\*P <.01 \*\*\*P < .001

registry. It may be part of a larger trend of decreasing crime or there may be another influence that is not able to be identified in this study.

Suburban/rural robbery was modeled as an AR1 and SAR1 process (1, 0, 0) (1, 0, 0)<sub>12</sub>. Robbery in suburban/rural areas of Pennsylvania experienced an increase in crime, with an average increase of 83.395 robberies per month. This also was statistically significant (.002). Once again, this variable was not thought to change as a result of Megan's Law. The increase may be due to some other factor. However, this study has uncovered that there is a trend of

increased crime in suburban/ rural areas in the monthly data and a decrease in crime in urban areas, with the exception of sex offenses and aggravated assault.

### **Statistical Summary**

The effectiveness of the original version of Megan's Law in Pennsylvania, which was passed on April 21, 1996, was examined using annual data from the Pennsylvania UCR. It was discovered that location, specifically urban versus suburban/rural, may have had an impact on reported crime rates in Pennsylvania. It was revealed that there was an increase in both urban and suburban/rural sex offenses and an increase in suburban/rural rape. It would appear from these findings that Megan's Law was not successful in reducing the targeted crimes, with the exception of rape in urban areas, which did decrease. However, as was mentioned earlier in the chapter, and will be discussed in greater detail in the subsequent chapter, Megan's Law may have created a higher level of awareness in the community, which could have led to an increase in reporting. In addition, the increase in offenses in suburban/rural areas could be a result of sex offenders moving away from urban areas and into the suburban/rural areas of the state. This also will be discussed further in following chapter. Finally, the changes that were seen in sex crimes in urban areas and with murder of an individual 14 and under in this research may be attributed to national trends (Bureau of Justice Statistics, 2011; Uniform Crime Report, 2011).

The nonequivalent dependent variables (murder, aggravated assault and robbery) showed change, but the change is likely not attributed to the passage of Megan's Law, but a result of a larger national trend or other factors. Murder, exhibited a decrease in both urban and suburban/rural areas. This decrease is likely attributed to a reduction of overall murder rates nationwide (Bureau of Justice Statistics, 2011) and not the implementation of Megan's Law. Aggravated assault increased in both urban and suburban/rural areas. This is contrary to the

national trend in which aggravated assault has been decreasing since 1994 (Bureau of Justice Statistics, 2011). The increase may be a result of another factor. The final nonequivalent dependent variable, robbery, increased in suburban/rural areas, while decreasing in urban areas. The decrease in urban areas is in accordance with the national trend of a reduction in robbery (Bureau of Justice Statistics, 2011). While it is not possible from this study to determine what may have led to the increases found in the various dependent and nonequivalent dependent variables, one interesting pattern does seem to emerge. There appears to be a general rise in suburban/rural areas of Pennsylvania, which showed increases in sex offenses, rape, aggravated assault and robbery, much of which is contrary to the national trend.

The effectiveness of the original implementation of Megan's Law, as well as its revision to include an online registry, was also assessed by analyzing rape and murder which could be disaggregated by age. Annual Pennsylvania UCR data was analyzed to determine the effectiveness of both the initial passage of Megan's Law and its subsequent revision. This was done as monthly data did not exist in order to analyze the effectiveness of each version of Megan's Law separately as was done with other variables in this research. It was discovered that murder of an individual under the age of 14 decreased with both the original version and subsequent revision of Megan's Law. This finding supports the notion that Megan's Law is effective in reducing and preventing the murder of children. However, it is also consistent with the national trend in which murder of individuals under the age of 14 has been steadily declining (Bureau of Justice Statistics, 2011). This will be further assessed in the discussion chapter. Murder of an individual age 15 and over was found to decrease with the original version of Megan's Law, but then increase with the creation of the online registry. This variable was not

thought to be effected with the implementation of Megan's Law. The increase may be attributed to another factor in Pennsylvania.

Rape of individual under the age of 18 increased with the initial implementation of Megan's Law and then decreased with the revision that created the online registry. The initial increase could be as result of heightened awareness on the part of citizens which caused more reporting. The decrease seen with the online registry component may be evidence that it is working to reduce crime. Finally, rape of an individual over the age of 18 increased with both the initial passage of Megan's Law and its revision.

A highly publicized piece of legislation such as Megan's Law and its revision would have arguably been widely known among residents in Pennsylvania. The knowledge that individuals may have gained from hearing about Megan's Law and sex offenses could have prompted individuals to report as they may have felt more comfortable doing so. Victims have failed to report crime to the police in the past because they felt that the police would not have the power to help them and/or they were concerned how the police would treat them (Kidd and Chayet, 1984). The structure of Megan's Law may have alleviated that fear for victims. If sex offenses were something that the victim perceived the police were taking seriously and devoting more time and attention to, a person may feel more comfortable reporting.

In the past, the implementation and subsequent promotion of other pieces of legislation has made victims feel more comfortable in reporting, even when the crime is of a violent or sexual nature. The passage of marital rape legislation has assisted women to feel more comfortable to report to police that their husband had raped them particularly after the coverage of the John Rideout case, in which he was convicted of marital rape (Bennice and Resick, 2003). Also the implementation and promotion of child abuse laws may have aided victims and those

who witness or suspect abuse, to be more comfortable in coming forward as more awareness was paid to the crimes as a result of laws being established (Whitcomb, 2003). Although these crimes are still highly underreported, the implementation of the legislation and the increased awareness can prompt more people to report than in the past. This same effect may be seen with regards to Megan's Law. Individuals who are victims may feel more comfortable in reporting because of the requirements in place for sex offenders if convicted. They may perceive police to place sex crimes at a higher priority as a result of Megan's Law. The fact that other violent crime which is not subject to registration under this legislation has increased in suburban/rural areas as well could be a result of other factors that are not able to be identified by this study.

It also may be the case that there is an increase of sex offenders moving out of the urban areas and into the suburban/rural areas of Pennsylvania causing sex crimes in the suburban/rural areas to increase. Burchfield (2011) argues that housing restrictions have driven sex offenders to the suburban/rural areas as there is no housing available in more urban areas. This could be the case for Pennsylvania, as until recently there were housing restriction laws in many jurisdictions in Pennsylvania, including urban areas. The housing restrictions may have forced Pennsylvania sex offender to relocate from the urban areas near Pittsburgh and Philadelphia to more suburban or rural areas of the state. This will be discussed further in the following chapter.

Overall, the findings from this study show, at best, mixed results regarding the effectiveness of Megan's Law in Pennsylvania for both its original implementation requiring sex offenders to register with law enforcement and notify the community of their presence and its revision to include an online registry. If one just assesses the effectiveness of this piece of legislation as a crime reduction and prevention tool, then Megan's Law has had some success. The assessment of the original version of Megan's Law and the revision creating an online

registry revealed a decrease in rape in urban areas. This finding shows that Megan's Law could be preventing and reducing rape in urban areas. The fact that both enactments of Megan's Law have reduced the annual rates for the murder of an individual under the age of 14 could be considered evidence that Megan's law accomplished the goal of reducing the murder of children. The implementation of the online registry showed a reduction in the annual rates for rape of an individual under the age of 18, also showing the Megan's Law may have been able to prevent the rape of children. Although, it may be the case that the decrease seen in this study may reflect the national trend of a decrease in these crimes (Bureau of Justice Statistics, 2011; Uniform Crime Report, 2011) and not be a result of Megan's Law.

However, it seems clear that Megan's Law could not be considered to have been entirely successful in reducing crime rates. The analysis of the data for both the original and revision of Megan's Law indicate that rape and sex offenses have increased in suburban/rural areas in the state of Pennsylvania. This is contrary to the ultimate goal of crime prevention and reduction. Also, the annual rates for rape of an individual over the age of 18 increased with both enactments of Megan's Law. This is not in support of the mission of Megan's Law to reduce sexual offenses. However, as has been discussed, this increase in crime rates may be as result of Megan's Law creating awareness about sex offenses and sexual offending. Access to the online registry and dissemination of information it provides, may make people more likely to report information than in the past.

In addition, the increase of rates in suburban/rural areas may be a result of an influx of sex offenders to more isolated, less populated areas, which could be a direct result of Megan's Law itself. Individuals who appear on the registry may want to live away from public as a result of persecution or stigma. It may also be the case that the increase in the number of sex offenders



as a result of Megan's Law and its registration requirements has made finding a job and housing in urban areas increasingly difficult which has led offenders to more suburban and/or rural areas. These and the preceding issues pertaining to the effectiveness of Megan's Law in Pennsylvania will be discussed in the following chapter in greater detail.

## CHAPTER VI

### DISCUSSION AND CONCLUSIONS

This study was the first to examine the effectiveness of Megan's Law in the state of Pennsylvania. Megan's Law, while arguably a popular initiative, had not been assessed to determine its effectiveness in reducing the targeted crimes in Pennsylvania. The goal of the study was to determine whether Megan's Law in Pennsylvania was effective, i.e., whether it was able to reduce the targeted crimes (rape, sex offenses, and murder of a child) of the law. This chapter first briefly summarizes of the key findings of the analysis (for a more detailed discussion of the findings see Chapter IV). Second, a discussion of the implications of the results is presented. Finally, a discussion of the current study's limitations is provided, followed by suggestions for future research and policy.

#### **Summary of findings**

##### **The original version of Megan's Law**

The effectiveness of the original version of Megan's Law, passed April 21, 1996, was examined using annual Pennsylvania UCR data for the years 1974-2009. This piece of legislation made it mandatory for sex offenders to register with law enforcement and also to notify the community as deemed appropriate by local law enforcement agencies, as the means of notification varied by jurisdiction. The data were analyzed using both OLS regression and ARIMA modeling. The analysis revealed that the rates for rape in urban areas and murder of an individual 14 and under decreased. These were the only dependent variables for which the reported rates decreased after the implementation of the legislation. Other variables/crimes which would have been expected to decrease if Megan's Law was effective were: suburban/rural rape; urban sex offenses; suburban/rural sex offenses; rape of an individual under the age of 18; rape

of an individual over the age of 18. However, all of these variables saw an increase after the implementation of the original version of Megan's Law.

The nonequivalent dependent variables in this study, which should not have been affected by the original version of Megan's Law experienced some expected, but also some unexpected change. Murder, in both urban and suburban/rural areas, showed a reduction. Also, murder of an individual over the age of 15 decreased. Aggravated assault increased in both urban and suburban/rural areas. Robbery decreased in urban areas, while increasing in suburban/rural areas. The increase of aggravated assault and robbery in suburban/rural areas follows the trend of other crimes seen in this study, in which suburban/rural crime has increased in Pennsylvania in general. The decrease of murder and robbery in urban areas follows national trends in which violent crime in general is decreasing (Bureau of Justice Statistics, 2011). The increase in aggravated assault in urban areas does not follow that national trend and may be attributed to some other factor unique to the urban areas assessed in Pennsylvania.

### **The revised version of Megan's Law**

The effect of the revised version of Megan's Law (November 24, 2004) on the dependent variables, was analyzed using OLS regression and ARIMA modeling with the data source of monthly Pennsylvania Uniform Crime Report data for the years 2001-2010. The revised version of Megan's Law created an online registry which could be viewed by the public. It was revealed that the number of murders of an individual 14 and under, as well as rape of an individual under the age of 18, decreased after the implementation. However, offense rates for rape of an individual over the age of 18 increased. Rape and sex offenses in urban areas saw a decrease after the online registry component of Megan's Law was created. However, in suburban/rural areas, rape and sex offenses both increased after the enactment.

The nonequivalent dependent variables also show an increase in crime in suburban/rural areas. There were increased rates for murder, aggravated assault and robbery. Overall, it appeared that violent crime was on the rise in the suburban and rural areas in the state of Pennsylvania. The nonequivalent dependent variables for urban areas showed a decrease in crime, with the exception of murder. Both aggravated assault and robbery decreased after the enactment, which is consistent with the general decline in violent crime rates (Bureau of Justice Statistics, 2011).

### **Megan's Law: Is it working in Pennsylvania?**

Both the original law and subsequent revision to include an online registry have not reduced the targeted crimes in any consistent or widespread manner. However, while Megan's Law has not been successful in reducing targeted crimes in suburban and rural areas in Pennsylvania, it could be argued that it may have had some success as urban rape has decreased after the implementation of both the original and revision of Megan's Law. In addition, a reduction in the number of murders of individuals 14 and under was also seen for both. There was a decrease in rape of an individual under the age of 18, as well as a decrease in urban sex offenses after the revision of Megan's Law. These reductions could be a result of the legislation. However, it could also be that these changes are not directly attributable to Megan's Law, but rather they reflect a larger national trend.

According to the Bureau of Justice Statistics (2011), the rates of homicide for individuals 14 and under had been declining steadily. It reached its lowest recorded point in the year 2000 and it has remained stable since. There was a national decline in child murder prior to the initial passage of Megan's Law in 1996 and the record low came before the creation of the online registry in Pennsylvania in 2004. The decrease that was revealed in this study for the original and

revised version of Megan's Law therefore very likely does not indicate effectiveness of the law, but rather consistency with overall national findings regarding child murder.

Also, the reduction in urban rape after both enactments of Megan's Law and rape of an individual under the age of 18 after the revision of Megan's Law are likely part of a national trend as well. Rape has been declining nationally (Uniform Crime Report, 2011). Sex offenses in urban areas declined after the revised version of Megan's Law. However, there has been a decrease in violent crime in general nationwide (Bureau of Justice Statistics, 2011). While it is not possible to disentangle the impact of the law from that national trend, it seems likely that the changes experienced in these offenses could be attributable to the overall national trend. At the very least, at this time, the general national trend cannot be ruled out as an alternative explanation for the declines in these crimes found in Pennsylvania.

Another possible contributing factor to the decrease that was seen in these targeted crimes in urban areas could be that sex offenders may have relocated to suburban and rural areas as a result of the registry and housing and employment issues they face within the urban areas. This movement could have contributed, at some level, to the decrease in urban areas and also subsequently the increase in suburban and rural crime rates in Pennsylvania, which is contrary to the national trend (Kneebone and Raphael, 2011). This issue is discussed in more depth in the following section: Sex offenders: You aren't welcome in this neighborhood!

The increase in reported sex crimes that was seen in this study in both rape and sex offenses, would appear to indicate that Megan's Law is not successful in reducing crime in Pennsylvania. However, there may be an alternate explanation for the increase in sex crimes in Pennsylvania's suburban/rural areas. It may be the case that Megan's Law has prompted individuals to report these crimes at a higher rate than before the law was enacted. Vasquez et al.

(2008) suggest that as more attention is paid to sex offenders and sex offenses and their actions are more readily brought to the attention of police, there will be an increase in these crimes. The passage of sex offender registration and notification laws could have led to an increased sensitivity to these crimes, and therefore an increase in reported crime in Pennsylvania.

Historically, individuals have not reported sexual victimizations to the police at a high rate (Arata, 1998; Finkelhor, 1998; Russel, 1983), especially in rural areas. In rural areas, there are a larger number of acquaintances in the community, more informal social controls, a general mistrust of government and a greater likelihood to conceal personal problems, which makes reporting less common (Weisheit, Wells & Falcone, 1995). This being said, it is also the case that when formal interventions do take place, rural areas are tougher on crime than urban areas (Austin, 1981; Myers & Talrico, 1987; Pruet & Glick, 1986). Rural areas often are tougher on crime as a result of the fact that the criminal justice system and law enforcement agencies in rural and/or suburban areas have stronger ties to the community and its residents than those that exist in urban areas (Crank, 1990; Einstein, 1982) and community sentiments regarding crime and criminals often lead to harsher punishments in rural areas (Menard & Ruback, 2003). Megan's Law and its subsequent revision may have sensitized those who live in rural and suburban areas to the offenses that are targeted by the law. This may then have led to a higher rate of reporting for these crimes. It also is possible that Megan's Law and the attention it brought to sex crimes may have encouraged rural and suburban residents to adopt a tough on crime stance in response to these offenses. The legislation also may have made victims feel more comfortable in reporting to police because of the perception that these crimes are a priority to police as a result of Megan's Law and its provisions.

In summary, if the effectiveness of Megan's Law is judged exclusively on its ability to reduce crime rates, then arguably, Megan's Law has not been effective in Pennsylvania. Even in the instances where there were decreases in crime post the original and revised version of Megan's Law, there are viable alternative explanations for the decline. It could be the case that the increases seen in suburban/rural areas are the result of an increase in reporting. It may also be that the increase in rape and sex offenses in suburban/rural areas could be a result of an alternate explanation stemming from Megan's Law, in which sex offenders are moving to suburban/rural areas and committing crime. It could also be that the decreases that were found could be reflective of the national trend in which violent crime is decreasing.

The current study has yielded mixed evidence about the effectiveness of Megan's Law in Pennsylvania. This study has also suggested alternative explanations for many of the findings, both in terms of decreases and increases in the targeted crimes. However, it is not possible from the current study to unbundle the impact of these other factors from the impact of the law. It is entirely possible that Megan's Law has had some marginal impact on the targeted offenses, but the impact certainly interacts with other factors to create a more complex picture than was initially anticipated.

### **Sex offenders: You aren't welcome in this neighborhood!**

The current research revealed an increase in crimes (rape and sex offenses) targeted by Megan's Law in suburban/rural areas in the state of Pennsylvania, both after the initial implementation of Megan's Law in 1996 and after its revision in 2004. These findings are interesting and confusing for two reasons. First, they are contrary to what would be expected if the law was having the desired impact, and second, they are contrary to the national trend (as discussed above). There are some factors that could possibly help to explain these somewhat

aberrant/unexpected findings. Above the possibility that the implementation and revision of Megan's Law may have served as impetus for the increased reporting of sex related crimes in these areas was raised. Another possible explanation that also was mentioned is that these increases in suburban and rural crime may be attributable, at least in part, to the increase in the number of sex offenders living in suburban and/or rural areas in the state. In this section, we are going to explore this second factor in more depth.

In many places, sex offenders have moved to rural and suburban areas to find housing and employment as a result of either the stigma of being a sex offender or housing restriction laws which limit where an offender can live (Socia, 2011). The release of registered sex offenders from prison poses problems for the sex offender to find housing and employment, even without residency restrictions in place (Burchfield, 2011; Burchfield and Mingus, 2008; Levenson and Cotter, 2005; Tewksbury and Lees, 2006; Zevitz and Farkas, 2000b). The stigma attached to a registered sex offender makes them an undesirable candidate to rent to or to employ. In urban areas, there is more competition for jobs and housing in general than in suburban and rural areas. When a potential landlord or employer is faced with multiple candidates, they are more likely to hire or rent to the individual who is not a registered sex offender. This can lead offenders to more secluded rural or suburban areas to find employment and housing as there is less competition.

In addition, some jurisdictions have implemented residency restrictions, which prohibit registered sex offenders from living within a certain distance (usually 500 to 2,000 or 2,500 feet) from a park, school, or other structure where children are often present. Such restrictions further complicate life for a sex offender living in an urban area, where these spaces are in greater abundance. As a result, sex offenders are migrating to more sparsely populated areas in rural



settings (Minnesota Department of Corrections, 2003; Socia, 2011). Residency restrictions and the community mentality of “not in my back yard” have pushed sex offenders to live further from urban areas into isolated areas and have made it harder for offenders to obtain basic needs for survival, such as a job, housing and a support network. This stress could potentially cause the offender to recidivate (Edwards and Hensley, 2001; Freeman-Longo, 1996), thus negating the goal of Megan’s Law and leading to higher crime rates.

This stigma attached to registered sex offenders which contribute to their lack of employment and housing opportunities may have affected sex offenders within the state of Pennsylvania, causing them to relocate to more suburban or rural areas in order to find housing or jobs. Additional provisions which have been instituted as a result Megan’s Law registration component may have also contributed to the increase of sex offenders to suburban and rural areas. In Pennsylvania, many jurisdictions in conjunction with Megan’s Law, have implemented ordinances, more commonly known as housing and residency restriction laws, dictating where sex offenders may legally reside. Both of the counties, Allegheny and Philadelphia, which constituted the urban areas in this study, had in place housing restriction laws for sex offenders during the periods from which the data were drawn.

The first sex offender residency restriction ordinance in Pennsylvania was in Doylestown Township in 2005. Subsequently, other counties and/or townships began following suit. Of particular note, Allegheny County in 2007, joined many other counties in Pennsylvania as well as across the nation and passed an ordinance that banned convicted sex offenders from living within 2,500 feet of a child care facility, public park, school, community center, or recreational facility. The sex offender had 45 days to relocate after the ordinance was passed. In October 2008, The American Civil Liberties Union and The Pennsylvania Institutional Law Project filed

a law suit challenging the law on behalf of six sex offenders who resided in Allegheny County. The residency restrictions made finding a place to live that did not violate the ordinance extremely difficult as most of the county contained the forbidden places and sex offenders had literally nowhere to live that would not violate the ordinance (Arthur & Associates, 2011). Rural and suburban areas in Pennsylvania, which did have housing and residency restrictions, had the restricted spaces in less abundance, which could contribute to the exodus of sex offenders out of urban areas and into these types of areas.

The ordinance in Allegheny County was struck down in a decision by Judge Lancaster, a U.S. district judge in 2009. Judge Lancaster noted that the decision to repeal this law was that many sex offenders were being forced to suburban and rural areas that took them away from job opportunities as well as support networks. Many offenders were being released from prison and had no place that they could legally live in Allegheny County because of the restrictions (Malloy, 2009). The case then made its way to the PA Supreme Court in 2011, where the ordinance was also repealed. Currently, this decision affects 150 jurisdictions in the state of Pennsylvania, with similar residency restrictions. This means that many jurisdictions may have to abolish their housing ordinances (Associate Press, 2011). It will be interesting to monitor the changes in the targeted crime rates in rural and suburban areas after these laws are repealed. This would provide a potentially more definitive test of the alternative explanation described above.

The stigma attached to sex offenders which create difficulty in procuring employment and housing in urban areas, as well as the housing and residency restrictions in the Pennsylvania may have influenced the increase in suburban/rural crime in Pennsylvania that was seen after the implementation of Megan's Law. Sex offenders with the original and revised Megan's Law may have faced discrimination and could not compete with other individuals for jobs or housing in

the urban areas, therefore forcing them to go to more rural and suburban areas. The influx of offenders to these areas would have increased after the housing and residency restrictions went into effect in urban areas such as Allegheny and Philadelphia County.

Many other states, California, Florida, Minnesota and Colorado to name just a few, have implemented housing and residency restrictions. Empirical research on the effectiveness of these laws is still in preliminary stages as these policies are new (Levenson, 2009) and future research is needed to determine if these laws are indeed preventing crime. Most current research has been centered on the unintended consequences of the laws (Barnes, Dukes, Tewksbury and De Troye, 2009; CSOM, 2008; Levenson, 2009; Zandbergen and Hart, 2006). Also current research has been done which has determined sex offenders are often living in socially disorganized neighborhoods because of the housing and residency restrictions and the constraints which they create for sex offenders in finding a place to live (Hughes and Burchfield, 2008; Hughes and Kadleck, 2008; Mustaine and Tewksbury, 2008; Mustaine, Tewksbury and Stengel, 2006; Socia, 2011; Youstin and Nobles, 2009). While these studies have indirectly looked at the effectiveness of housing and residency restrictions, they have not assessed the law overtime with an examination of official crime rates. Future research should examine official UCR data using an ITS design to determine if there are changes in crime after the implementation of housing and residency restriction laws. In addition, future research should examine urban versus suburban/rural areas to see if the housing and residency restrictions had differential impact on crime rates in these two areas possibly as a result of sex offenders relocating to suburban/rural areas to find housing and/or employment.

The stress that a sex offender faces as a result of being exiled to remote rural and suburban/areas away from job opportunities, treatment facilities, and support networks could

assist in the offender recidivating (Barnes et al., 2009; Burchfield, 2011 Zandbergen and Hart, 2006). This could have been the case for Pennsylvania and the increase in sex offenses that was seen in suburban and rural areas of the state may be a result. Especially since nationwide, there has been steady decline in suburban crime (Kneebone and Raphael, 2011).

### **Megan's Law; An ineffective piece of legislation**

Despite some of the potential alternative explanations offered above for some of the findings in Pennsylvania, overall, the results of the current study, coupled with results from previous studies which have examined the effectiveness of Megan's Law indicate that the legislation has not been effective in reducing and/or preventing rape, sex offenses and/or the murder of children. Past researchers (Petrosino and Petrosino, 1999; Sandler et al., 2008; Schram and Milloy, 1995; Vasquez et al., 2008) have seen little impact of sex offender registration and notification laws on targeted crime rates. Letourneau et al. (2010) who credited the reduction in sex crimes to South Carolina's sex offender registration and notification laws also acknowledged that the change could be a result of other factors and not exclusively the legislation. The general consensus in the literature is that Megan's Law has not been effective at its intended goal of crime prevention and reduction and the overall results of this study are in accordance with the conclusions of other researchers. Megan's Law has not been effective in its intended goals in Pennsylvania.

There are a number of factors that may help to explain the apparent lack of effectiveness of Megan's Law. These factors include: the overall reduction in violent crime nationwide; the implementation of housing and residency restrictions for registered sex offenders; the passage of the law as a result of fear and a moral panic and not based upon empirical facts.

### **A national decrease in crime**

While there were some reductions seen in Megan's Law targeted crimes in urban areas in Pennsylvania, there are alternate explanations for these findings. The main reason for the decrease of targeted crimes (rape, murder of children, sex offenses) could very well be an already existing national decreasing trend in violent crime (Bureau of Justice Statistics, 2011; Uniform Crime Report, 2011) for the time period covered in this study. Decreases that were seen in other studies (Letourneau et al., 2010) of targeted crimes also may be attributed to this national decline. Violent crime had begun to rise in the 1960s and also rose in the 1980s, but then has been in decline every year since 1993 (Bureau of Justice Statistics, 2011). This time period, with the exception of the 1960s, was included in this study. It seems likely that if crime is declining nationally, especially crime in urban areas, then it would also be declining in Pennsylvania. The decrease in crime then is not likely attributed to Megan's Law.

### **Housing and residency restrictions**

The reduction in urban crime could also be a result of sex offenders moving out of urban areas and into suburban/rural areas as a result of the stigma of being a registered sex offender which causes housing and employment issues and/or because of housing and residency restriction laws. This could drive up the crime rate in the more suburban and rural areas of the state and lowering the crime rate in urban areas. Socia (2011) in examining New York State found that sex offenders had difficulty securing housing as a result of the residency restrictions in many urban areas which led them to sparsely populated areas. As discussed above, this may also be the case in Pennsylvania, in which sex offender housing and residency restriction laws are rendering sex offenders homeless in urban areas, and has forced to them move to the rural and suburban regions of the state, explaining the increase in crime in those areas.

## **Megan's Law a result of moral panic**

The overall apparent lack of effectiveness of Megan's Law nationwide and in Pennsylvania may be attributable, in some measure, to the fact that this law was passed more as a result of a moral panic and not based on empirical evidence or rationale. Moral panics occur when society has an exaggerated reaction to a perceived threat from a person or group of people (Hier, 2008). In this case, the exaggerated reaction was the passage of Megan's Law and the group that posed a threat to society was sex offenders. A series of highly publicized cases, beginning with the Jacob Wetterling case in 1989, continuing with Polly Klaas's abduction and murder in 1993 followed by the abduction, rape and murder of Megan Kanka in 1994 (Zilney and Zilney, 2009) created trepidation over sex offenders victimizing our children, and arguably solidified the public's opinion on sex offender legislation. People were afraid of sex offenders. The public looked to legislators, not to prison officials or to those in the psychiatric field as was the case in the past, to solve the problem of sex offenders. The legislators responded with methods to handle sex offenders that were outside the realm of criminal law and civil commitment, and so began the registration and notification requirement to quell the fears of a nation (Lieb, Quinsey, and Berliner, 1998).

Sex offender notification and registration laws were not based on empirical facts or evidence, but on emotions. These laws are symbolic in nature, they make people feel better and cast the appearance that legislators are doing something about the problem of sex offenders. The moral panic that hit America led to the passage of sex offender notification and registration laws as symbolic pieces of legislation rather than as instrumental strategies for addressing the problem (Gavin, 2005; Jenkins, 1998; Sample 2006; Sample, 2011; Zgoba, 2004). Further evidence of this is seen with the research conducted by Sample and Kadleck (2008) in which Illinois

legislators revealed in interviews that these laws were intended to show the public that the legislators did indeed recognize the fear and concerns that the public had regarding sex offenders and that they were motivated to deal with the problem. The legislators also indicated that they thought that sex offender registration and notification laws would have little to no effect on the crimes committed by sex offenders, but the laws would make the citizens feel safer and happy that laws had been passed. It is certainly possible that many legislators, including those in Pennsylvania, may have the same sentiments that Sample and Kadleck (2008) found in their research. Megan's Law was passed to make voters happy and to create the appearance that something was being done about the sex offender problem.

### **Implementation based on myths and misconceptions**

Megan's Law is (arguably) a symbolic piece of legislation that was passed as a result of a moral panic based upon fear. It was also passed based upon myths and a misunderstanding of sex offenders and sex offenses which can contribute to its ineffectiveness in Pennsylvania and other areas, as past research has indicated. Most citizens believe that strangers commit the majority of sexual crimes and therefore having the registration and notification requirements will be successful in reducing crime. However, most sexual crimes are committed by someone known to the victim, such as a family member, an intimate partner, a friend or an acquaintance, and not a stranger (Bureau of Justice Statistics, 2011; Greenfield, 1997). With the legislation's main focus being based on preventing stranger crime and not crimes committed by intimates, it is not surprising that these laws have not seen success. Individuals are concerned with strangers stalking playgrounds, schools and parks in the proverbial white van, when instead they should be looking to those closest to them as potential sexual offenders who could harm their children.

Megan's Law may actually be hindering prevention of child sexual abuse as it takes the focus away from those committing the crime the most (those closer to the victims), and putting the spotlight on preventing stranger crime. As a result, Megan's Law provides parents, caretakers, and individuals with a false sense of security. They believe that the only people they need to watch out for are those on the registry. It creates the mentality that these are the sex offenders who need to be avoided and everyone else, who is not on the registry, is alright to interact with. When in reality they have more to fear from those whom they are most acquainted with and likely do not appear on Megan's List.

Megan's Law is also based on the misconception of the public that all sex offenders' recidivate at a high rate and will ultimately commit another crime (Levenson, Brannon, Fortney & Baker, 2007; Levenson and Cotter, 2005). However, research reveals that is not the case. Hanson and Bussiere (1998) and Langan, Schmitt and Durose (2003) found low recidivism rates (5-19%) for sex offenders in their research. Sample and Bray (2006) found that no sex offender in their sample had higher than a 10% rearrest rate for the same offense they were initially incarcerated for. Schram and Milloy (1995) found in their research that overall rates for recidivism were relatively low. In addition, Sandler et al. (2008) discovered that only 4% of sex offenders in their sample had a prior conviction for a sexual offense, which means that 96% of the sample would have not been on the sex offender registry when they committed their offense. The fact that Megan's Law is based on this misconception might also be contributing to its ineffectiveness. Sex offenders do not have the high recidivism rate that the majority of the public believe them to have.

Although the preceding studies reveal a low rearrest rate for sex offenders, it should be noted that these statistics are based on rearrest rates, which often reveal the highest level of an



impact. There is a good deal of recidivism which occurs that is not known to police. Sex offenders will often offend for years without being arrested or rearrested. Examining rearrest rates may not be the best estimate of recidivism for sex offenders. Without knowing the exact amount of recidivism that occurs, which would be a virtually impossible task, we can take into consideration the recidivism research that is presented while acknowledging that sex offenders may be recidivating at a higher rate than is known to police/researchers.

### **Policy Implications**

The current study sought to add to the sparse literature regarding the effectiveness of Megan's Law and also more specifically, to assess its ability to prevent and reduce crime in the state of Pennsylvania. The results from the current study do not indicate that Megan's Law has been very effective, which fits the overall consensus of past research. Changes in the existing legislation and/or implementation could potentially improve the ability of Megan's Law to reduce targeted crime in Pennsylvania.

Megan's Law was arguably passed as a knee-jerk reaction, as a result of fear and a public moral panic and not based on empirical evidence related to sexual offending. This motivation behind the passage of the legislation may have influenced its ability to effectively reduce and prevent crime in Pennsylvania and nationwide. Sex offender registration and notification policies based on empirical evidence, and not misconceptions, should be implemented in an effort to more effectively reduce and prevent crime. The facts regarding sex offenders should be examined and utilized in policy implementation. Megan's Law was passed after the rape and murder of Megan Kanka. It sought to prevent future murders/rape/abductions of children by informing citizens of sex offenders in their neighborhood, thereby allowing citizens to alter their daily routine activities and those of their children to avoid such individuals.

However, the fact that most crime of this nature is not committed by a stranger, but by an intimate, who likely does not appear on the registry, suggests that this legislation was passed without any attention to the facts and realities of sex offenses. Megan's Law was passed to prevent one of the rarest occurrences; the abduction, rape and murder of child by a stranger. It is set up to prevent stranger crime. While the registry does show the public who to avoid in their community, it does not identify warning signs or indicators that there may be sex offenders who do not appear on the registry, but still are in the community.

As a result of public support for Megan's Law, it is unlikely that it will be repealed or revised in any major way. However, some alterations to the existing legislation could contribute to its effectiveness and overall safety of citizens. Dissemination of information that informs citizens about the reality of sexual offending could assist individuals in knowing that most sexual crimes are committed by someone known to the victim, allowing people to practice protective behaviors and/or diligence in monitoring those closer to them as opposed to exerting more time and energy looking out for stranger danger. The Pennsylvania Megan's Law website does not have an information section that details the fact that most sex crime is committed by an intimate or those known to the victim. Including such information on the website could be helpful in assisting individuals to protect themselves and their children. A separate icon could be added to the website which provides information about sex offenders and sexual offenses. This has the potential to enlighten individuals by letting them know that there are other dangerous individuals, even friends or family members, besides those who appear on the registry. Examining the current Pennsylvania Megan's Law online registry leads a viewer to believe that these are the only sex offenders that are out there. It suggests that if you know who these people are, you can protect yourself and your child. However, that is not always the case. There is

danger from individuals who do not appear on this list, which may be a fact that many people are not aware of. The Pennsylvania Megan's Law website can educate people about the reality of sex crimes, while still exhibiting the pictures and personal information of registered offenders.

In summary, Megan's Law, which was arguably passed primarily to quell the fears of the masses, has not been seen to be terribly effective in the state of Pennsylvania. This lack of effectiveness may be a result of the fact that the legislation was passed without attention to the realities of sex offenses. Modifying the existing Pennsylvania Megan's Law website to inform readers about the nature and extent of sexual victimizations is a good place to start in addressing this issue by educating the public.

### **Research limitations and suggestions for future research**

The current research was a good starting point for assessing the effectiveness of Megan's Law in Pennsylvania, which up until this point had not been assessed. The major limitation of this study, although unavoidable, is that the only data that were examined were secondary data. The secondary data source in this study was the PA UCR, which has uniformity in recording and reporting, but the fact that not all law enforcement agencies report to the PA UCR means that not all reported crime would be included in this research. In addition, it is only reported crime that was used in this study, which is a general concern in using secondary data. Crimes of a sexual nature are typically underreported (Faulkner, 1996; Finkelhor and Browne, 1986; RAINN, 2011) and not known to the police. In examining crimes only reported to the police, there is then the possibility that there is unreported crime which could shed more light on the true level of effectiveness of Megan's Law in Pennsylvania. However, given the population that is the focus of Megan's Law, this "dark figure" would be extremely hard if not impossible to adequately

asses. Consequently, in this case, the only real available data and therefore the most appropriate data for this assessment are official data (i.e. the Pennsylvania UCR).

Another limitation of this study was the lack of previous research on the effectiveness of Megan's Law. There is sparse research on the effectiveness of Megan's Law, particularly using an ITS design and ARIMA modeling as an analysis technique. Additional research could have provided more guidance on how to assess effectiveness of Megan's Law. As was mentioned in the literature review, the studies that existed (Letourneau et al., 2010; Sandler et al., 2008; Vasquez et al., 2008) only examined typically one or two variable(s) statewide in order to determine effectiveness of sex offender registration and notification requirements. The current study was modeled after those, but sought to improve upon past measurements of effectiveness by looking at urban versus suburban/rural crime rates and not just statewide rates in order to see if location and/or type of area made a difference on sex offenses. In addition, including more dependent variables (urban rape; suburban/rural rape; rape of an individual 18 and above; rape of an individual 18 and under; urban sex offenses; suburban/rural sex offenses; murder of an individual 14 and under) to gauge effectiveness allowed for a more in-depth assessment of Megan's Law's ability to prevent and/or reduce crime. Also the inclusion of nonequivalent dependent variables (urban murder; suburban/rural murder; murder of an individual 15 and over; urban robbery; suburban/rural robbery; urban aggravated assault; suburban/rural aggravated assault) as a control for validity threats also improves upon past research that did not include nonequivalent dependent variables, with the exception of Sandler et al. (2008). While the lack of previous research may have been somewhat of a limitation in terms of providing a foundation from which to work, the current study was still able to improve on the existing studies, add to the

general knowledge base on the effectiveness of Megan's Law, and also provide some insight for future research.

In terms of future research, there are a number of areas that still need to be examined. Future researchers could conduct interviews with Pennsylvania legislators who originally drafted Megan's Law to see: 1) why the law was passed; 2) what specifically they intended the law to do; 3) whether they thought it would be effective in reducing crime; 4) their reaction to the findings of this study which did not show Megan's Law to be effective. A similar study to the one which was conducted in Illinois (Sample and Kadleck, 2008) where legislators were questioned about sex offender community notification and registration requirements could be conducted in Pennsylvania. Legislators could elaborate on Megan's Law intent and current effectiveness. This could provide some insight into whether Megan's Law is working as planned and/or whether the legislators thought that the law would be successful in reducing and/or preventing crime to begin with. This may reveal some new insights for implementation changes and/or policy implications.

In addition to speaking with Pennsylvania legislators, the findings of this study could be compared to a similar state, such as Ohio, to determine if Megan's Law is being implemented in a similar way. Also, Megan's Law could be examined to see if there is a difference in effectiveness in the urban areas versus the suburban/rural areas of Ohio, as was seen in Pennsylvania. The same crimes for the same time period could be examined. The results could provide insight as to whether Megan's Law is simply ineffective in Pennsylvania or whether other similar states, such as Ohio, have seen the same results.

As was mentioned previously in this chapter, it is the belief of this researcher that the stigma attached to being a registered sex offender and/or the housing and residency restrictions

in the state of Pennsylvania may have influenced the increase in suburban/rural crimes after the implementation of both the original and revised version of Megan's Law. This is a question that should be researched further. Another study, using an ITS design could look at impact of the implementation of housing and residency restriction laws on reducing targeted crimes in both urban and suburban/rural areas. Given the fact that now most, if not all, housing and residency restriction laws in the state of Pennsylvania are in the process of being repealed, future research could assess the ability of the laws to reduce crime. More specifically, research could examine monthly crime rates for sex offenses and rape before the housing and residency restrictions laws went into place, after their implementation and finally after they were repealed.

In addition, an evaluation could be conducted of the arrest and prosecution of individuals for sex offenses in suburban/rural areas. It may be the case that the suburban and rural police departments in the state of Pennsylvania are putting more emphasis and/or targeted these crimes as a result of Megan's Law, which would lead to an increase in crime rates in these areas.

To summarize, future research is needed to more fully examine the impact of Megan's Law. Future research should focus on: the intent of the passage and reaction to the current effectiveness Megan's Law by legislators in the state of Pennsylvania; the effectiveness and impact of housing and residency restriction laws in Pennsylvania; examination of suburban/rural areas and their approaches to arrest and prosecution of sex offenders; and comparison of effectiveness of Megan's Law between Pennsylvania and a similar state (e.g. Ohio). Research in these areas could identify new or added reasons which may have influenced Megan's Law's effectiveness and/or impact that past studies and the current research were not able to identify. The current study served as a good starting point by identifying some possible factors which may have influenced Megan's Law's effectiveness (or lack thereof) in Pennsylvania.

## **Conclusions**

In summary, the current study did show some reduction in crimes that were targeted by Megan's Law, but there are alternative explanations for those changes. The increase in suburban/rural crime, after both the original and revised version of Megan's Law, indicates that there are other factors at work in those areas that need to be identified and more fully studied. It may be the case that sex offenders were relocating to those areas at higher rates as a result of the stigma of being a registered sex offender and/or the housing and residency restriction laws and subsequently committing crime, or it could be that these areas modified approaches to addressing such crimes as a result of sensitization by the law. Which, if either, it might be cannot be determined from the current study, but it is an important issue to pursue. It could be that the rural/suburban areas are more focused on sex crimes and the prosecution of sex offenders.

The lack of effectiveness of Megan's Law in Pennsylvania could be the result of any of the factors discussed. It could also be a result of issues that are not identified by this study. Megan's Law is a relatively new piece of legislation, with changes and alterations having been made within the last 5 to 7 years. Research has not examined the effectiveness to a large degree. There is still a long way to go to fully understand what effect this law has had on crime, if any. This study was the first to look at the law in Pennsylvania, and while it did shed some light, there currently is not a clear picture of Megan's Law's effect on crime in the state. From this study, the preponderance of the evidence points to Megan's Law's inability to prevent and/or reduce targeted crimes. However, it is hard to unbundle the impact of Megan's Law from the other factors that are obviously operating to create the changes identified in this study. In order to know the true and full effect of this piece of legislation, more research needs to be conducted as

it is only through further research that a more complete picture of the impact of Megan's Law will begin to emerge.



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