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ABSTRACT

In the early 1970s, the state and federal prison population was under 200,000, with incarceration rates having remained relatively stable for a half century. For a variety of reasons (e.g., increased crime rates, changed political context, the "get tough" movement), the United States entered a period mass incarceration. The number of inmates in state and federal prisons increased 600 percent to over 1.5 million. Counting jail populations, the daily count of Americans behind bars currently stands at over 2.4 million—or about 1 in every 100 adults. However, despite the large number of people placed behind bars, little research has been conducted to determine the impact of imprisonment on the reoffending behavior of individuals placed behind bars.

Within this context, this dissertation focus on a three central empirical questions that stand at the heart of the mass imprisonment movement: 1) When an offender is imprisoned as opposed to being given an alternative sanction (e.g., probation), is the person less likely to reoffend?, 2) Does incarcerating offenders for longer periods of time result in a greater reduction in recidivism?, and 3) Does placement in facilities with harsher conditions (e.g., fewer visitations, more restrictions) have a larger deterrent effect when compared to placement in facilities with less harsh conditions?

To address the three research questions, this dissertation used meta-analytic techniques to complete a quantitative synthesis of 85 research studies. The overall mean effect size and weighted mean effect size of the three independent variables in question (i.e., non-custodial versus custodial sanctions; sentence length; harshness of conditions) were calculated to determine its impact on recidivism. Additionally, the impact of various moderators was also assessed.

iii

The results indicate that the specific deterrence argument for the use of prison is not empirically supported. When examining the impact of non-custodial and custodial sanctions on post-release reoffending, a 14 percent increase in recidivism was found for those sentenced to custodial sanctions as opposed to non-custodial sanctions. Thus, imprisonment was associated with an increase, rather than a decrease, in recidivism contradicting the predictions of specific deterrence theory. Similarly, placement in harsher prison conditions was associated with a 15 percent increase in post-release criminal behavior, again failing to provide support for the specific deterrent argument. Only the analyses examining the impact of sentence length showed a deterrent effect, with longer sentences associated with a five percent decrease in recidivism.

In light of these findings, the continued reliance on mass incarceration as a main response to crime has been questioned. If the goal of imprisonment is to reduce the recidivism of those who are placed behind bars, this study has shown that this is not an empirically sound argument. In fact, placing individuals in prison and increasing the harshness of those prisons are contributing to the very problem it is attempting to solve. Consequently, the results suggest that an alternative crime control strategy to mass imprisonment needs to be employed if the ultimate goal is to reduce the post-release criminal behavior of those who enter the criminal justice system.

iv

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TABLE OF CONTENTS

Abstract	iii
Acknowledgments	vi
Table of Contents	viii
List of Tables	xi
List of Figures	xii
0	

CHAPTER I: UNDERSTANDING THE EFFECTS OF IMPRISONMENT: THE	
AMERICAN PRISON CRISIS	1
America's Imprisonment Problem	4
International Comparisons: America as the World's Largest Incarcerator	4
The Growth of Imprisonment in the United States	9
The Disproportionate Use of Imprisonment by Race	14
The Recidivism Problem	22
Methodological Considerations in Measuring Recidivism	23
Overall Rates of Recidivism	27
Beck and Shipley's Study	27
Langan and Levin's Study	
Sabol et al.'s Study	29
International Comparisons	31
Factors Influencing Recidivism	
Criminal History	32
Type of Crime	
Gender, Race, and Age	35
The Effects of Imprisonment: Prisons as a Specific Deterrent	
Non-custodial versus Custodial Sanctions	43
More Time versus Less Time in Prison	44
Harsher versus Less Harsh Prison Conditions	45
The Effects of Imprisonment: Prisons as a Criminogenic Experience	45
Prisons as "Schools of Crime"	
Age-Graded Social Bond Theory	52
General Strain Theory/Coercion Theory	54
Labeling Theory	56
Extensions of Labeling Theory: Defiance and Shaming	61
Prisons as Inappropriate Treatment	63
Summary	64
Research Strategy	65
Conclusion	67

CHAPTER II: METHODOLOGY	69
Quantitative Synthesis of Research Studies: Conducting a Meta-Analysis	70
Strengths of Meta-Analysis	74

Conclusion	97
Moderating Variables	97
Fail-Safe N Statistic	95
Binomial Effect Size Display	94
Effect Size Estimates	91
Analysis	90
Methodological Quality	
Social Bonds	
Other Criminogenic Needs	
Criminal History	
Sample Demographics	
Study Charateristics	86
Moderating Variables	86
Independent Variables and Research Questions	84
Dependent Variable	83
Sample of Studies	81
"Apples and Oranges"	
Publication Bias	77
Weaknesses of Meta-Analysis	77
Policy Implcations	
Moderating Variables	
Magnitude of the Effect	
Large Number of Studies Can Be Assessed	
Replication	

CHAPTER III: RESULTS	
Non-custodial Versus Custodial Sanctions	
Publication Characteristics	
Sample Characteristics	
Study Characteristics	
Effect Sizes	
Fail-Safe N	
Moderating Variables	
Sentence Length	
Publication Characteristics	
Sample Characteristics	
Study Characteristics	
Effect Sizes	
Fail-Safe N	
Moderating Variables	
Conditions of Confinement	146
Publication Characteristics	
Sample Characteristics	
Study Characteristics	
Effect Sizes	

Fail-Safe N	
Moderating Variables	
Conclusion	

CHAPTER IV: DISCUSSION	159
Theoretical Implications	160
Policy Implications	165
Public Saftey and Taxpayer Costs	165
Reentry Programs	168
Rehabilitaion	170
Future Directions	173
Unraveling the "Black Box"	
Conditions of Confinement	174
Prisons Around the World	175
More Research on Moderating Variables	176
Conclusion	179

EFERENCES

APPENDIX A	
APPENDIX B	
APPENDIX C	
APPENDIX D	

LIST OF TABLES

TABLE 1.1 THE PRISON POPULATION RATE AND THE RAW NUMBER OF PEOPLE INCARCERATED FOR
VARIOUS COUNTRIES AROUND THE WORLD IN 20095
TABLE 1.2 BLACK/WHITE AND HISPANIC/WHITE IMPRISONMENT RATIOS BY STATE17
TABLE 3.1 DESCRIPTIVE STATISTICS: PUBLICATION CHARACTERISTICS FOR NON-CUSTODIAL
VERSUS CUSTODIAL COMPARISONS 101
TABLE 3.2 DESCRIPTIVE STATISTICS: SAMPLE CHARACTERISTICS FOR NON-CUSTODIAL VERSUS
CUSTODIAL COMPARISONS 104
TABLE 3.3 DESCRIPTIVE STATISTICS: STUDY CHARACTERISTICS FOR NON-CUSTODIAL VERSUS
CUSTODIAL COMPARISONS 107
TABLE 3.4 MEAN EFFECT SIZES 110
TABLE 3.5 MEAN EFFECT SIZES: PUBLICATION CHARACTERISTICS FOR NON-CUSTODIAL VERSUS
CUSTODIAL COMPARISONS 115
TABLE 3.6 MEAN EFFECT SIZES: SAMPLE CHARACTERISTICS FOR NON-CUSTODIAL VERSUS
CUSTODIAL COMPARISONS 118
TABLE 3.7 MEAN EFFECT SIZES: STUDY CHARACTERISTICS FOR NON-CUSTODIAL VERSUS
CUSTODIAL COMPARISONS 120
TABLE 3.8 DESCRIPTIVE STATISTICS: PUBLICATION CHARACTERISTICS FOR SHORTER VERSUS
LONGER LENGTHS OF INCARCERATION 128
TABLE 3.9 DESCRIPTIVE STATISTICS: SAMPLE CHARACTERISTICS FOR SHORTER VERSUS LONGER
LENGTHS OF INCARCERATION 131
TABLE 3.10 DESCRIPTIVE STATISTICS: STUDY CHARACTERISTICS FOR SHORTER VERSUS LONGER
LENGTHS OF INCARCERATION 133
TABLE 3.11 MEAN EFFECT SIZES: PUBLICATION CHARACTERISTICS FOR SHORTER VERSUS LONGER
LENGTHS OF INCARCERATION 139
TABLE 3.12 MEAN EFFECT SIZES: SAMPLE CHARACTERISTICS FOR SHORTER VERSUS LONGER
LENGTHS OF INCARCERATION 142
TABLE 3.13 MEAN EFFECT SIZES: STUDY CHARACTERISTICS FOR SHORTER VERSUS LONGER
LENGTHS OF INCARCERATION 143
TABLE 3.14 DESCRIPTIVE STATISTICS: PUBLICATION CHARACTERISTICS FOR LESS HARSH VERSUS
HARSHER CONDITIONS OF CONFINEMENT 147
TABLE 3.15 DESCRIPTIVE STATISTICS: SAMPLE CHARACTERISTICS FOR LESS HARSH VERSUS
HARSHER CONDITIONS OF CONFINEMENT 150
1 ABLE 3.16 DESCRIPTIVE STATISTICS: STUDY CHARACTERISTICS FOR LESS HARSH VERSUS
HARSHER CONDITIONS OF CONFINEMENT 151
TABLE 3.17 MEAN EFFECT SIZES: PUBLICATION CHARACTERISTICS FOR LESS HARSH VERSUS
HARSHER CONDITIONS OF CONFINEMENT 154
1 ABLE 3.18 MEAN EFFECT SIZES: SAMPLE CHARACTERISTICS FOR LESS HARSH VERSUS HARSHER
CONDITIONS OF CONFINEMENT 156
1 ABLE 3.19 MEAN EFFECT SIZES: STUDY CHARACTERISTICS FOR LESS HARSH VERSUS HARSHER
CONDITIONS OF CONFINEMENT 157

LIST OF FIGURES

FIGURE 1.1 STATE AND FEDERAL PRISON IMPRISONMENT RATES, 1925-2008	-11
FIGURE 1.2 LOCAL JAIL IMPRISONMENT RATES, 1985-2008	-13
FIGURE 1.3 PERCENT OF STATE INMATES REARRESTED, RECONVICTED, AND RETURNED TO	
PRISON WITH A NEW SENTENCE WITHIN SIX MONTHS, ONE YEAR, TWO YEARS, AND	
THREE YEARS OF RELEASE	-30

CHAPTER I

UNDERSTANDING THE EFFECTS OF IMPRISONMENT: THE AMERICAN PRISON CRISIS

In the past four decades, the United States has made an inordinate commitment to mass incarceration to solve its crime problem (Abramsky, 2007; Beckett, 1997; Clear, 1994; Currie 1985, 1998; Garland, 2001; Gottschalk, 2006; Lynch, 2007; Simon, 2007; Tonry, 2004, Wacquant, 2001; Whitman, 2003). In fact, many have argued that the United States has embarked on what Clear (1994) has poignantly labeled a "penal harm movement" that has advocated incapacitation and other get tough policies aimed at the punishment of offenders. During this penal harm movement, the progressive policies focusing on the treatment and rehabilitation of offenders that were practiced throughout most of the 20th Century have been replaced with more punitive means concentrating on the control and surveillance of offenders (Garland, 2001). No longer is the criminal justice system operating the under the ideals that offenders are victims of dire circumstances and can be changed into law-abiding citizens when given the opportunity. Rather, offenders are seen as rational and calculating individuals who make logical decisions and thus must be refrained from crime through harsh and severe sanctions.

During this "get tough" era, imprisonment has been one of the main crime control strategies utilized in the United States, with the hopes of both incapacitating offenders and deterring current and future offenders. As Garland (2001) argues, unlike the past, prisons are not seen as a last resort and a place where offenders are exposed to treatment. Rather, prisons are now used for a variety of offenders, both serious and minor, where the goal is to deter future

offenders, incapacitate current criminals, and, at times, exact revenge on those found guilty of crimes (Abramsky, 2007; Currie, 1998; Lynch, 2007; Zimring, 2001). As a result, prisons and jails are now filled with many low-level marginal felons and drug offenders along with hardened, violent criminals (Currie, 1998; Lynch, 2007; Zimring, 2001).

Due to this commitment to incarceration, imprisonment rates have increased an unprecedented 600 percent since 1972, with more people currently behind bars than working at both McDonald's and Wal-Mart combined worldwide (Nellis and King, 2009; Pager, 2007). And this expansion is continuing with the number of people in state and federal prisons increasing on average two percent each year (Justice Policy Institute, 2009). Notably, this explosion in the inmate population has been a uniquely American phenomenon. The U.S. is now the largest incarcerator in the world, with an imprisonment rate of 760 per 100,000 people in the population. This rate corresponds to 1 in every 99.1 American adults being currently incarcerated in a prison or jail (Warren, 2008; World Prison Brief, 2009). Further, in the United States, there are differential imprisonment rates by race (Abramsky, 2002; Beckett and Western, 2001; Jacobs and Carmichael, 2001; Lynch, 2007; Mauer, 1999; Miller, 1996; Parenti, 2000; Tonry, 1995; Wacquant 2000, 2001; Warren, 2008; Yates, 1997, Ziedenberg and Schiraldi, 2005). Although roughly 1 in 100 white men aged 18 and older are incarcerated, the ratio is much lower for Hispanics (1 in 36) and for blacks (1 in 15) (Warren, 2008).

Although many scholars have painstakingly detailed the enormity of the mass incarceration movement, surprisingly little research has been done to document the overall effect this movement has had on offender reoffending behavior. The majority of the studies examining the impact of this unprecedented growth have focused on the macro-level effects of incapacitation and deterrence, with the majority of the research finding that the increased use of

imprisonment has not been associated with substantial reductions in the crime rate (Currie, 1998; Ekland-Olsen, Kelly, and Eisenberg, 1992; Levitt, 1995; Marvell and Moody, 1995, 1997; Nagin, 1998; Petersilia, 1992; Spelman, 2000; Zimring, Hawkins, and Ibser, 1995).

In contrast, research that has addressed the impact of custodial sentences on individual offender behavior has been scarce and inadequate (Gendreau, Goggin, and Cullen, 1999; Nagin, Cullen, and Jonson, 2009; Smith, Goggin, and Gendreau, 2002; Villettaz, Killias, and Zoder, 2006). Considering that the United States currently incarcerates over 2.4 million individuals, this lack of research is remarkable (Sabol, West, and Cooper, 2009).

In this context, this dissertation attempted to add to this research in order to more precisely determine the impact that imprisonment has on the reoffending of individuals sentenced to non-custodial sanctions compared to those given custodial sanctions. Using metaanalytic techniques, this study quantitatively synthesized the current research concerning imprisonment and recidivism. In addition, the differential impact of longer and shorter sentences and harsher and less harsh prison conditions were examined. Due to the use of meta-analyses, it was possible to also control for a variety of moderators (e.g., methodological rigor of the study) to determine if the imprisonment effects varied for different groups of offenders.

To place this dissertation into context, the introductory chapter is divided into five components. This first section discusses the extent of imprisonment in the United States, how it has grown in the past 40 years, and the disproportionate use of imprisonment for minorities. The research on recidivism and the problems measuring recidivism are addressed in the second section. The third and fourth sections focus on the competing perspectives about imprisonment. First, in the third section, a review the literature arguing imprisonment has a specific deterrent or preventative effect is discussed. Second, in the fourth section, the research claiming prisons and

jails have a criminogenic effect is discussed. Specifically, the literature reviewing how prisons are "schools of crime," can "knife off" prosocial influences, and stigmatize individuals is examined. Finally, the introductory chapter concludes with the research strategy that will organize this dissertation.

AMERICA'S IMPRISONMENT PROBLEM

International Comparisons: America as the World's Largest Incarcerator

On any given day, there are 2.4 million people behind bars in the United States (Sabol et al., 2009; World Prison Brief, 2009). With this, the United States has become the largest incarcerator in the world. And, this reliance on mass imprisonment to address the crime problem is a uniquely American phenomenon. Although a handful of other Western industrialized countries have seen increases in their imprisonment rates, the rate found in the U.S. significantly dwarfs those found in any other nation. Still, unlike the United States, other nations, such as those in the Scandinavian region and Canada, have had much stability in their imprisonment rates for the last four decades. This finding suggests that an extensive dependence on incarceration in the last half century has not been a worldwide phenomenon.

When examining both the raw numbers and imprisonment rates, it is clear that the United States incarcerates more of their citizens than any other country in the world. As seen in Table 1.1, in terms of raw numbers, the U.S. incarcerates roughly 750,000 more individuals than China and roughly 1.5 million more than Russia, the world's second largest incarcerator (World Prison Brief, 2009). When examining imprisonment rates, which controls for the varying populations of countries, the United States still leads the world with 760 inmates per 100,000 people in the population followed by Russia with a rate of 620 people incarcerated per 100,000 (Hartney,

Table 1.1. The Prison Population Rate and the Raw Number of People Incarcerated forVarious Countries Around the World in 2009

Country	Prison Population Rates per 100,000 National Population	Raw Number Incarcerated (including pre-trial detainees/remand prisoners)
United States	760	2,310,984
Russia	620	877,595
Mexico	208	227,735
Spain	164	76,478
England and Wales	154	84,622
Australia	129	27,615
China	119	1,565,771
Canada	116	38,348
Netherlands	100	16,416
France	96	59,655
Germany	90	73,592
Norway	70	3,369
Japan	63	80,523

2006). In Europe, the highest imprisonment rate is found in the Czech Republic with a rate of 210, followed by Spain with a rate of 164, and England and Wales with a rate of 154. All these rates are less than one third of the rate found in the U.S.

The large discrepancy in the rate of incarceration between America and other countries still remains and is quite pronounced when comparing the United States to its North American counterparts. For instance, the United States's rate of 760 significantly dwarfs the rate of 116 found in Canada and 208 in Mexico. Consequently, the United States has a rate that is between four and eight times that of its industrialized European and North American counterparts and a rate that is roughly 24 times higher than those countries (e.g., India, Negal, Nigeria) with the lowest imprisonment rates in the world (Hartney, 2006; World Prison Brief, 2009).

To really gain an understanding of the true extent of America's use of imprisonment compared to the rest of the world, one only needs to examine the percent of the world's incarcerated population located in the United States. Although the U.S. accounts for only 5 percent of the world's population, it houses 25 percent of the over 9 million people incarcerated worldwide. Thus, one in four people incarcerated in the world is locked up in the United States (Warren, 2008). China, who has four times the population of the United States, only houses 14 percent of the world's incarcerated population. Notably, these two countries, China and the United States, have behind their bars roughly 40 percent of the world's imprisoned population with the other 193 countries accounting for the other 60 percent.

Although the United States has shown a commitment to mass imprisonment for the past four decades, this has not been the case around the world (Tonry, 2007). Unlike the United States, the majority of the world's countries have not experienced a continuous increase in their imprisonment rate since the early 1970s (Tonry, 2007). Rather the imprisonment rates around

the world have varied widely, with some nations maintaining a stable rate, while others were decreasing, some only recently increasing, and still others having varying rates over the last four decades.

In Europe, the Scandinavian countries of Denmark, Norway, and Sweden have had stable imprisonment rates between 40-60 prisoners per 100,000 population for the last half century (Lappi-Seppala, 2007). Germany has also had stable imprisonment rates for the last 25 years hovering around 90 inmates per 100,000 population (Weigend, 2001). In contrast, the imprisonment rates in Finland actually decreased substantially from 1965 to 1990 and have stabilized since hovering around 65 inmates per 100,000 population (Lappi-Seppala, 2007; Tonry, 2007).

One particularly revealing international comparison is that between the United States and Canada. In his cross-cultural comparison, Brodeur (2007) demonstrated that countries that clustered together geographically and culturally seem to incarcerate people at roughly the same rate. Specifically, he found that within the five clusters (e.g., Nordic Council countries, Central European countries, the Baltic countries, the Caribbean, and the Indian subcontinent), the countries had remarkably similar imprisonment rates. The United States and Canada share one of the world's largest common borders, second only to the border shared between Russia and China (Brodeur, 2007). Due to this geographic proximity, one would expect Canada to be similar to the United States in terms of their incarceration rates (Brodeur, 2007). However, this is not the case. While the U.S. incarceration rate has greatly increased since the 1970s, the rate in Canada has remained relatively stable around 100 inmates per 100,000 population since the 1960s (Ouimet, 2002; Webster and Doob, 2007). Despite the cultural, economic, and geographical similarities between the two countries, America's rate of imprisonment is 6.5 times

higher than that of Canada (World Prison Brief, 2009), thus illuminating the United States's unique reliance on imprisonment in response to criminal behavior.

Although many countries have had stable or decreasing rates, the United States is not alone among countries that have shown an increase in the use of imprisonment. However, what is distinct about the U.S. is the length and the enormity of that expansion. For example, England and Wales and New Zealand have shown substantial increases in their imprisonment rates, however, this has only occurred since the 1990s (Newburn, 2007; Pratt, 2007; Tonry, 2007). Similarly, Japan has shown a recent increase in the use of incarceration. After approximately three decades of falling or stable prison populations, the number of inmates in Japan increased 15 percent between 1990 and 2005 (Johnson, 2007). However, in spite of the increased use of imprisonment in these nations, their imprisonment rates are still substantially lower than that of the U.S. For instance, as of 2009, England and Wales has an imprisonment rate of 154, New Zealand has a rate of 197, and Japan has a rate of 63 inmates per 100,000 population (Table 1.1) (World Prison Brief, 2009). Despite the recent expansion in the use of imprisonment in these countries, the United States still has an incarceration rate roughly four to 12 times higher than these nations.

Out of 195 countries in the world, only one other nation besides the United States, the Netherlands, has seen a constantly increasing imprisonment rate for roughly the past 40 years (Downes, 2007; Tonry, 2007). However, it is important to note that although the Netherlands has experienced a seven-fold increase in their incarceration rate since 1973, the result of this 38-year expansion has not corresponded to an exceptionally high imprisonment rate (100 per 100,000 population) (Tonry, 2007; World Prison Brief, 2009). Thus, when all the international statistics, are compared, it becomes apparent that the willingness of countries to place a

substantial number of their citizens behind bars is not a worldwide phenomenon; rather, this is a case of American exceptionalism.

The Growth of Imprisonment in the United States

As shown above, it is well-documented that the United States incarcerates more people than anywhere in the world. However, the U.S. has not always possessed such high rates of imprisonment. Rather, in the early 20th Century, the United States possessed a quite stable imprisonment rate hovering around 110 inmates per 100,000 population from 1930-1970 (Blumstein and Cohen, 1973). What is even more remarkable about this stability is that the U.S. population increased roughly 50 percent during this time period. Thus, even though, there was a significant increase in the population, this did not correspond to a surge in the prison population. The imprisonment rate had been so stable regardless of war, the Great Depression, population increases, and increases in the crime rate, that in the early 1970s, scholars were in the process of developing a theory of the stability of punishment, which argued that there is a "stable maintenance of a reasonable amount of punishment" regardless of the actual levels of crime (Blumstein and Cohen, 1973, p. 200; Blumstein and Moitra, 1980).

However, this view of stability would soon be shattered with the United States engaging in a mass imprisonment binge originating in the 1970s. In 1971, there were fewer than 200,000 prisoners in the United States. This number has increased in the last 40 years with presently over 1.6 million inmates in state and federal prison (Currie, 1998; Sabol et al., 2009). When the over 785,000 people incarcerated in local jails are added to this number, there are now 2.4 million people in the United States behind bars (Sabol et al., 2009; World Prison Brief, 2009). This corresponds to a 600 percent increase in the U.S.'s incarcerated population since the early 1970s, thus earning the U.S. the title of the world's largest incarcerator. To put into perspective the

enormity of the amount of people incarcerated, the number of people behind bars in U.S. prisons and jails now exceeds the number of people residing in 15 U.S. states and more people than the entire population of Houston, Texas (Austin and Irwin, 2001; Currie, 1998).

It is important to realize that these numbers represent averages of the country as a whole. Some states have even higher incarceration rates. Across the entire United States, 1 in 99.1 people are incarcerated (Warren, 2008). However, when examining individual states, these rates range from 1 in 55 in Louisiana to 1 in 226 in Maine. The prison population in the state of Texas alone is over 172,500 and there are more than 173,000 people incarcerated in state and federal prisons in California (Sabol et al., 2009). Only seven countries in the world (the U.S., China, Russia, Brazil, India, Mexico, and Thailand) have prison populations that exceed 170,000 inmates (World Prison Brief, 2009). Impressively, both California and Texas incarcerate more people than 188 countries in the world.

As shown in Figure 1.1., not only have the raw number of people incarcerated increased but also the rate of imprisonment in state and federal prisons has seen an exponential rise. What makes using rates particularly telling is that rates control for the differences in the U.S. population over time. Thus, when examining rates of imprisonment, the argument that the U.S. population has also increased during the same time period is made a moot point. As can be seen in Figure 1.1, the state and federal imprisonment rate hovered between roughly 80 to 110 per 100,000 people in the population from 1925 to 1975. This substantial pattern was the basis for Blumstein and Cohen's (1973) theory of the stability of punishment. However, starting in 1976, imprisonment rates began to balloon with the rate increasing to 133 per 100,000 at the end of the 1970s. At the close of the 1980s, the rate had more than doubled to 276 per 100,000. By 1999, the rate had climbed to 463 per 100,000. The first eight years in the current decade has also seen







a rising rate, with the current rate of people in state and federal prisons sitting at 509 inmates per 100,000 people in the population, which is five times the rate found in 1925 (Bureau of Justice Statistics, 2008).

To put this increase in the imprisonment rate into perspective, from 1976 to 2000, the United States experienced a 315 percent increase in its imprisonment rate (Lynch, 2007). This rise becomes particularly notable when compared to the rate of increase seen in the roughly 50 years between 1925 and 1976. During that half century, the imprisonment rate only increased 52 percent. The differences in these increases in imprisonment rates become even more pronounced when placing them within the context of the growth of the U.S. population (Lynch, 2007). From 1925 to 1976, the U.S. had an 88 percent increase in the population; however, from 1976 to 2000, the U.S. population only increased 26.5 percent. Thus, the growth in the imprisonment rate in the United States can be separated into two distinct time periods: 1) 1925 to 1976, during which imprisonment rates remained relatively stable in spite of large increases in the U.S. population, and 2) 1976 to the present, during which the rate has seen an essentially continuous increase despite a much smaller increase in population size (Lynch, 2007).

Not only have federal and state prison populations increased in recent years, but jail populations have also risen since the mid-1980s. In 1983, roughly 223,000 people were behind bars in local jails. By the end of that decade, the population had grown to approximately 395,000. The jail population rose to over 605,000 during the 1990s. This increase continued





through the first decade of the 2000s, with a current jail population of 785,556, which is more than three times the population in 1983 (Minton and Sabol, 2009; *Sourcebook of Criminal Justice Statistics*, 2008). Thus, just as the state and federal prison populations have increased in recent decades, the same phenomenon has also occurred with jail populations in the U.S.

As with state and federal prison statistics, it is also important to examine the incarceration rates of local jails in order to control for the changes in the U.S. population over the last 25 years. As demonstrated in Figure 1.2, the incarceration rate of local jails has seen essentially a continuous increase since 1985. In 1985, the incarceration rate of U.S. jails was 108 inmates per 100,000 population. This doubled by 1998 to a rate of 219 jail inmates per 100,000 population (*Sourcebook of Criminal Justice Statistics*, 2008). The rate has continued to increase and currently the U.S. has a jail incarceration rate of 258 (Minton and Sabol, 2009). Therefore, just as with state and federal prison rates, local jail incarceration rates have similarly been rising contributing to the overall massive use of imprisonment in the United States.

The Disproportionate Use of Imprisonment by Race

Although the raw numbers and rates of people incarcerated in the U.S. presented above are at unprecedented levels, there is a differential use of imprisonment among the races in the United States. The research examining the disproportionate use of imprisonment between minority and white Americans dates back from the early 1980s, with both the older and more recent research reaching a similar conclusion: African Americans, and more recently Hispanics, are incarcerated at a higher rate than whites (Abramsky, 2002; Beckett and Western, 2001; Blumstein, 1982, 1993; Garland, Spohn, and Wodahl, 2008; Jacobs and Carmichael, 2001; Lynch, 2007; Mauer, 1999; Miller, 1996; Parenti, 2000; Sabol et al., 2009; Sampson and Lauritsen, 1997; Tonry, 1995; Wacquant 2000, 2001, 2002; Warren, 2008; Yates, 1997,

Ziedenberg, and Schiraldi, 2005). In raw numbers, roughly 900,000 of the 1.6 million current prisoners in the United States are African American or Hispanic (Mauer and King, 2007; Sabol et al., 2009).

To really gain understanding of the differential chances of going to prison among the races, one only needs to examine the lifetime chances of going to prison for whites, blacks, and Hispanics. Overall, for all U.S. residents born in 2001, 6.6 percent are expected to serve some time in prison during their lifetime (Bonczar, 2003). When broken down by race and sex, the percentages become even more astonishing. Thirty-two percent of black men born in 2001 are expected to serve time in state or federal prison in their lifetime. This drops almost half to 17 percent for Hispanic men and is only 6 percent for white males. The percentage of women born in 2001 expected to serve time in prison is much smaller than for men, but the racial disparity is still remains. Of black women born in 2001, 5.6 percent are expected to go prison in their lifetimes, whereas only 2.2 percent of Hispanic women and 0.9 percent white females are expected to serve time in a state or federal prison during their lifetime (Bonczar, 2003; Currie, 1998; Mauer and King, 2007).

Another way to examine racial disparity in imprisonment is to compare the percentages of minorities in the general population to the percent that are incarcerated (Lynch, 2007). Although Africans Americans make up 12 percent of the U.S. population, they constitute 38 percent of the prison population. Hispanics are also overrepresented comprising 15 percent of the U.S. population but 20 percent of the prison population. While both blacks and Hispanics are severely overrepresented in the prison system, their white counterparts are substantially underrepresented. The U.S. population is 69 percent white, but the prison population is only 34 percent white (Human Rights Watch, 2002, 2003; Lynch, 2007; Sabol et al., 2009). Although,

minorities have in recent times significantly outnumbered whites in prison, this has not always been the case. As early as 40 years ago, 70 percent of the prison population was white. This has drastically reversed in four short decades with now roughly 60 percent of the prison population black or Hispanic (Gottschalk, 2006; Sabol et al., 2009; Wacquant, 2001).

Another way to fully comprehend the magnitude of the racial differences in prison is to examine the rates of imprisonment for whites, blacks, and Hispanics. For men, blacks are incarcerated at a rate of 3,161 prisoners per 100,000 people in the population. That is 6.5 times the rate for whites at 487 inmates per 100,000 people. Although not as high as their black counterparts, Hispanics also have an especially high incarceration rate at 1,200 per 100,000 people, which is roughly 2.5 times the white rate (Mauer and King, 2007; Sabol et al., 2009; Wacquant, 2001).

Just as with the lifetime expectations of serving time, women have much lower rates of imprisonment than males; however, the racial discrepancies still remain. Black women have an imprisonment rate of 149 per 100,000 population, which is roughly three times the 50 per 100,000 population incarceration rate for white women. Hispanic women have a rate that is 50 percent higher than their white counterparts at 75 per 100,000 population (Sabol et al., 2009).

Thus far, all the statistics presented have focused on the nation as a whole. However, there are large differences in racial disparities across the 50 states (Blumstein, 1993; Crutchfield, Bridges, and Pitchford, 1994; Human Rights Watch, 2002; Mauer and King, 2007). As shown in Table 1.2, nationwide blacks are 6.6 times more likely to be incarcerated than whites, while Hispanics are 2.4 times more likely (Human Rights Watch, 2002, 2003). However, these ratios vary widely across states. For blacks, the ratio is as high as 17.1 in West Virginia to as low as

State	Black/White Ratio	Hispanic/White Ratio
Alabama	4.8	2.4
Alaska	5.2	1.8
Arizona	6.3	2.1
Arkansas	4.7	3.6
California	6.4	1.7
Colorado	9.4	2.6
Connecticut	15.0	8.4
Delaware	6.9	0.9
Florida	5.7	1.4
Georgia	4.0	1.1
Hawaii	3.3	3.4
Idaho	4.5	2.2
Illinois	10.5	2.0
Indiana	6.9	1.6
Iowa	12.6	3.1
Kansas	9.3	1.9
Kentucky	7.2	4.4
Louisiana	5.9	4.1
Maine	8.4	3.7
Maryland	6.2	0.8
Massachusetts	8.9	7.0
Michigan	6.3	2.7
Minnesota	14.3	5.2
Mississippi	5.0	8.9
Missouri	5.7	1.8
Montana	8.7	3.3
Nebraska	9.9	3.6
Nevada	5.1	1.1
New Hampshire	10.3	5.9
New Jersey	14.3	4.8
New Mexico	10.1	2.6
New York	10.7	5.5
North Carolina	6.2	1.7
North Dakota	7.5	5.8
Ohio	8.0	2.6
Oklahoma	6.0	1.8
Oregon	8.0	1.6
Pennsylvania	11.1	8.0
Rhode Island	13.8	4.1
South Carolina	5.1	2.2
South Dakota	14.8	3.4
Tennessee	5.0	2.0
Texas	5.4	1.7
Utah	9.5	2.9
Vermont	11.1	4.4
Virginia	6.4	1.1
Washington	7.0	1.8
West Virginia	17.1	7.6
Wisconsin	11.6	2.5
Wyoming	8.8	1.8
National	6.6	2.4

Table 1.2. Black/White and Hispanic/White Imprisonment Ratios by State

3.3 in Hawaii (Human Rights Watch, 2002). Notice in no state are whites incarcerated at a higher rate than their African American counterparts, and only five states have ratios under five. On the other hand, fourteen states have black/white ratios over 10. Although less dramatic than their black counterparts, Hispanics are still more likely to be incarcerated than whites. For Hispanics, state ratios range from 0.8 in Maryland, which corresponds to more whites than Hispanics being incarcerated in that state, to 8.9 in Mississippi. Thus, unlike blacks, Hispanics are not overrepresented in every state; however, they are at least two times as likely as whites to be incarcerated in 33 states (Human Rights Watch, 2002).

It is thus well established that there are substantial differences in the incarceration rates of whites, blacks, and Hispanics, and there has been much research examining the reason for this racial difference. Many commentators have argued that the reason for this disparity is the differential offending rates of the races and the increased enforcement of drug crimes in recent decades (Blumstein, 1993; Garland et al., 2008; Gottschalk, 2006; Human Rights Watch, 2002, 2003; Mauer, 1999; Wacquant, 2001; Weich and Angulo, 2000; Ziedenberg and Schiraldi, 2005). Before the launch of the War on Drugs, researchers found evidence that the racial differences in prison were primarily due to the differential offending rates of whites and blacks. For example, in his landmark study, Blumstein (1982) discovered that 80 percent of the racial discrepancy in state prisons could be explained by the racial disproportionality in offending. Specifically, he found that although blacks constituted 49 percent of the state prison population in 1979, they also comprised 43 percent of the arrests for that year. Thus, he concluded that the offending rates of blacks is what drives their higher incarceration rate rather than racially discriminating practices.

Blumstein's (1982) findings were confirmed by Langan (1985) and Crutchfield, Bridges, and Pitchford (1994). Instead of using arrest rates of blacks to measure black offending, Langan measured black offending rates by using victims' reports from the National Crime Survey. He argued this was a better measure as it did not rely on the official reporting to and processing of offenders by police agencies. Even utilizing this measure, Langan's findings were consistent with Blumstein, showing that roughly 85 percent of the racial disparity in state prison admissions could be explained by racial differences in offending.

In 1993, Blumstein replicated his 1982 study. Examining crime generally, Blumstein confirmed his earlier findings by showing that 74 percent of the racial disparities in prison could be explained by differential offending rates. More recently, Tonry and Melewski (2008) replicated Blumstein's work using 2004 imprisonment data. Notably, they did not fully reproduce Blumstein's earlier findings. Tonry and Melewski discovered that the amount of disparity in prison explained by differential offending patterns by whites and blacks has decreased substantially in the past 20 years. Whereas Blumstein found that 80 percent of the racial disparity was explained by differences in offending, Tonry and Melewski determined that only 61 percent could now be explained by blacks' greater involvement in crime. Consequently, roughly 40 percent of the racial disparity in imprisonment was *not* explained by differences in offending.

However, these findings showing much disparity could be explained by differential offending rates did not hold when examining drug offenses. Notably, one of the earliest studies to discover this discrepancy concerning drug offenses was conducted by Blumstein. In both of his 1982 and 1993 articles, he decided to not only examine crime in general but also specific types of crime. When examining drug offenses, he found that only 50 percent (as opposed to the

roughly 75 percent for crime in general) of the racial disparity in state prisons could be explained by offending rates. Even more striking is that when Blumstein excluded the drug offenses from his analysis, over 90 percent of the disparity in incarceration was explained by differential offending. Consequently, for drug offenses, Blumstein concluded that there was some discrimination or differential enforcement occurring between whites and blacks.

More recently, substantial differences in the incarceration rates for drug offenses among whites and minorities are seen. Nationally, blacks and Hispanics are sent to prison for drug offenses at a much higher rate than whites (Blumstein, 1982; 1993; Crutchfield et al., 1994; Human Rights Watch, 2000, 2002; Mauer, 1999, 2009; Langan 1985; Lynch, 2007; Sampson and Lauritsen, 1997; Tonry, 1995; Tonry and Melewski, 2008). In Mauer's (2009) testimony on racial disparities to the Subcommittee on Crime, Terrorism, and Homeland Security, he presented evidence for this disparity. He argued, that although blacks constitute 14 percent of current illicit drug users, they comprise roughly 34 percent of drug arrests and 53 percent of people sentenced to prison for drug offenses. Thus, blacks are, in fact, being targeted and treated more harshly than their white counterparts for drug crimes. He suggested two ways in which blacks are disproportionately targeted: federal crack cocaine laws of the 1980s and school zone drug laws that disproportionately target minorities (Mauer, 2009). Thus, although it may not be outright, overt discrimination among the police, courts, and lawmakers, it is possible that there is racial discrimination covertly written into and produced by U.S. drug laws.

Texas is one state in which the differential impact of the War on Drugs is especially pronounced. Ziedenberg and Schiraldi (2005) report that in Texas, the number of African Americans incarcerated for drug offenses increased 360 percent between 1986 to 1999, while the number of whites imprisoned for drug offenses decreased by nine percent in that same time

period. What is remarkable about this is just not the vast difference between blacks and whites, but that national studies have shown that whites and blacks use illicit drugs at a similar rate (8.5 percent versus 9.7 percent, respectively) (Substance Abuse and Mental Health Services Administration, 2003). Consequently, Ziedenberg and Schiraldi argue that blacks are disproportionately being targeted by War on Drugs and are arrested and imprisoned at higher rates for their drug use than their white counterparts.

This over-incarceration of minorities has serious and detrimental impacts on the minority population. As will be reviewed when discussing the criminogenic effects of imprisonment, incarceration has long lasting impacts after the individual leaves the prison gates (Austin and Irwin, 2001). Once a person is "marked" as a convict, people often begin to view this person as suspicious and untrustworthy. Thus, prosocial friends and family often no longer associate with the individual, leaving the person to associate with other antisocial individuals (Sampson and Laub, 1993). It also becomes very difficult for these individuals to obtain work as many employers are reluctant to hire ex-convicts (Holzer, 2007; Holzer, Raphael, and Stoll, 2004, 2006, 2007; Pager, 2003, 2007). Further, in several states, ex-prisoners lose the right to vote and many opportunities to participate in civil society (Abramsky, 2006; Fellner and Mauer, 1998). Faced with a lack of prosocial associates and employment and an inability to participate in civil society, these individuals often find themselves in highly criminogenic situations once outside the prison walls. Because of the overrepresentation of minorities in prison, these problems disproportionately affect blacks and Hispanics. Consequently, the impact of imprisonment becomes a social justice issue as its effects are largely concentrated among minorities in the United States.

THE RECIDIVISM PROBLEM

As has been clearly demonstrated, the United States has unmistakably embraced a policy of mass incarceration as one of its main responses to criminal behavior. Proponents of this expansive use of imprisonment have argued that this policy will lead to a reduction in criminal behavior and thus ultimately to an increase the public's safety (Wilson, 1975). Although locking up roughly 2.4 million individuals has undoubtedly had some effect on the crime rate, many scholars note that this extensive reliance on imprisonment has not been associated with large reductions in crime (Austin and Irwin, 2001; Clear, 1994; Currie, 1985, 1998; Ekland-Olsen et al., 1992; Levitt, 1995; Marvell and Moody, 1995, 1997; Nagin, 1998; Petersilia, 1992; Spelman, 2000; Zimring et al., 1995). Consequently, many of these researchers have concluded that the United States's imprisonment experiment has been a failure (Currie, 1985).

This policy commitment to incarceration has not only failed to produce a large reduction in crime, but it has also created major unintended or latent consequence—more prisoners than ever before in U.S. history are being released back into the community after serving a prison sentence. Fully, 93 percent of all the people sentenced to prison will inevitability be released back into society after completing their prison term (Hughes and Wilson, 2003; Petersilia, 2003; Useem and Piehl, 2008). This corresponds to more than 670,000 prisoners released back into neighborhoods and communities from state and federal prisons each year or over 1,700 inmates exiting the prison gates and entering the streets each day (Petersilia, 2003; Travis, 2005; Useem and Piehl, 2008). Compare those numbers to the mere 150,000 prisoners released per year 30 years ago, and it becomes apparent that the excessive reliance on incarceration has led to a massive increase in the number of ex-prisoners in living in society (Travis, 2005). In fact, in the short span of 20 years, the number of ex-offenders living in the community has more than

doubled from 1.8 to 4.3 million (Raphael and Stoll, 2004). Since virtually every offender sentenced to prison will be released and over four million ex-inmates are currently living in our nation's communities, it is of paramount importance to determine the risk to public safety that is posed by released prisoners and their subsequent criminal behavior. Additionally, by examining the post-release criminal behavior of offenders released from prison, the utility of imprisonment as a crime reduction mechanism can also be assessed.

Methodological Considerations in Measuring Recidivism

When examining the risk of that released prisoners pose to society, the results are not promising. The majority of studies find that roughly two-thirds of ex-prisoners recidivate within a three-year period after release (Beck and Shipley, 1989; Hughes and Wilson, 2003; Langan and Levin, 2002; Petersilia, 2003; Seiter and Kadela, 2003). Petersilia (2003, p. 139) poignantly termed this high rate of return to criminal behavior the "revolving door of justice." In other words, ex-prisoners are being released into the community only to engage in more criminal behavior, which ultimately results in these same offenders returning to their cell behind the prison walls. Consequently, it becomes very apparent that imprisonment often does not lead to the complete desistence or the end of an individual's criminal career. Rather, for a large number of inmates, incarceration only provides a temporary break in their criminal trajectory that is resumed once released back into the community.

However, before reviewing the specific findings of the recidivism research, it is important to note that estimating the extent of recidivism involves many methodological challenges. In his pivotal work on recidivism, Michael Maltz (1984) explains the special issues faced by researchers when trying to obtain an accurate measure recidivism. Specifically, he argues that estimates of recidivism are sensitive to a variety of factors and failure to take these

into account can lead to underestimates of the true recidivism rates among offenders. According to Maltz, the factors having the largest effect on the estimates of recidivism include whether official or self-report data is utilized, what the actual measure of recidivism entails, the amount of time the individual is followed, and geographical location that is included in the recidivism measure (e.g., only in-state reoffending versus in-state and out-of-state reoffending). For example, when using official records versus self-report data, Maltz argues that recidivism will be underestimated, because only those transgressions known to the police will be counted. Thus, all the crimes committed by an offender but not reported to the police will not be included in the estimate of recidivism.

Additionally, Maltz explains how the use of official data can lead to an even further underestimation of recidivism because in the U.S. criminal justice system, juvenile criminal records are often sealed. Consequently, because researchers cannot access the offenders' full criminal history, individuals who may have engaged in criminal behavior prior to adulthood may be counted as first-time offenders rather than recidivists. The reason this issue is of vital importance is that two researchers could examine the same group of offenders and come to vastly different conclusions about their recidivism rates depending on what type of data (e.g., official as opposed to self-report) is used to estimate the post-release criminal behavior of individuals.

Although the problem of using official as opposed to self-report data is important, the most salient methodological concern when estimating recidivism is the knowing the actual manner in which recidivism is measured (Maltz, 1984). Recidivism is generally defined as the return to criminal behavior; however, scholars have utilized a variety of measures to operationalize this definition. The four most common ways recidivism has been measured in the
field include rearrest, reconviction, reincarceration, and revocation. Even though each measure is measuring a return to criminal behavior, each of these measures can lead to vastly different conclusions concerning the amount of recidivism among offenders (Beck and Shipley, 1989; Fischer, 2005; Langan and Levin, 2002; Maltz, 1984).

One study clearly illustrating of the impact of the measurement of recidivism on outcomes was conducted by Fischer (2005) who addressed the high rates of recidivism found in California. Although the national recidivism rate hovers around 40 percent (Grattet, Petersilia, Lin, and Beckman, 2009), for years, California has been portrayed as possessing the highest rate of recidivism in the country, with rates up to 70 percent (Fischer, 2005; Grattet et al., 2009; Petersilia, 2003). Fischer argues however that this is an inaccurate representation because California's high recidivism rate is a methodological artifact based on how recidivism is being measured. He contends that when recidivism is similarly measured across the states, California does not continue to have the nation's highest recidivism rate.

Specifically, Fischer shows that California achieves the nation's highest recidivism rate only if technical violations are counted. If recidivism is measured as a return to prison for a new crime only, then California's rates are comparable rates to Florida and New York and lower than North Carolina and Illinois. Similar results occur when other measures of recidivism are used, such as rearrest and reconviction. Thus, what is driving the 70 percent recidivism rate that many policymakers tout is the high rate of technical revocations in California. Put simply, California has the U.S.'s highest technical violation recidivism rate, but has rearreast, reconviction, and reimprisonment rates comparable to the rest of the nation. Thus, Fischer provides a poignant example of how the differential operationalization of recidivism can lead to vastly different conclusions concerning offenders' post-release criminal behavior.

Along with the type of data and measure of recidivism utilized, a third methodological consideration to take into account when assessing the amount of recidivism is the length of the follow-up period (Maltz, 1984). Depending on the time window in which recidivism will be measured, different researchers may report different recidivism rates. For example, if one researcher examines post-release behavior for six months whereas another examines behavior for an entire year, they will inevitably come to different conclusions, with the scholar following offenders for a full year estimating higher recidivism rates. This issue is clearly illustrated in Langan and Levin's (2002) defining analysis of recidivism. Studying over 270,000 released offenders, they reported that the six month rearrest rate of released state prisoners was 29.9 percent. This estimate is less than half of the reported three-year rearrest rate of 67.5 percent for the released offenders. Thus, depending on which time period is utilized, scholars could estimate anywhere between one-third to two-thirds of the same cohort of offenders were rearrested after release from prison. Consequently, when examining the post-release reoffending behavior of inmates, one must be very cognizant of the amount of time included in the follow-up period because longer time frames will be associated with higher recidivism rates.

The final methodological challenge is the geographical area or location that is included in the estimate (Maltz, 1984). In other words, if scholars only examine the post-release offending behavior of offenders within their own state, the rate will be underestimated because offenders often commit crimes in other states. Maltz argues that this is particularly salient in areas that have large population centers close to state lines. Many offenders may offend in the bordering state due to the easy access between the two states. Further, criminal enterprises, such as drug trades and gang activity, in these areas often cross state lines, thus leading offenders to engage in crime both within their home state and a neighboring state. Thus, to gain a more accurate

estimate of the true recidivism rate of offenders, scholars must take into account both in-state and out-of-state reoffending.

Overall Rates of Recidivism

Although over 670,000 prisoners are released back into society each year, relatively little research has been conducted on the post-release behavior of these inmates. In fact, in the past 20 years, only three major national-level studies have been conducted on the recidivism of exprisoners. Two of these three analyses focused on the post-release criminal behavior of state prisoners (Beck and Shipley, 1989; Langan and Levin, 2002) while one examined the recidivism of federal prisoners (Sabol, Adams, Parthasarathy, and Yuan, 2000). All three of these of studies will be discussed in detail below. However, what is remarkable is that the three reports found similar results. Regardless of the cohort of prisoners followed, all three examinations discovered that the recidivism rate of newly-released prisoners is quite high. Put simply, among both released state and federal prisoners, imprisonment does not result in the complete desistence of crime once an inmate leaves the prison gates. In fact, quite the opposite is revealed with the majority of inmates recidivating within three years of release.

Beck and Shipley's Study. In one of the first major national studies conducted on recidivism, Beck and Shipley (1989) sampled roughly 16,000 people released from prison in 11 states in 1983, which accounted for 57 percent of all state prisoners released that year. This study utilized multiple measures of recidivism, examined both in-state and out-of state recidivism, and had various follow-up periods up to three years. It was limited, however, due to its reliance on official data. Specifically, recidivism was measured using both state and FBI data for felony and serious misdemeanors for the sample. Thus, the recidivism rates reported are underestimates because less serious crimes are not included in the rate.

Using multiple measures of recidivism—rearrest, reconviction, and reincarceration— Beck and Shipley found that the majority of releasees reenter the criminal justice system within the first three years of release. Specifically, within three years of release, 62.5 percent of inmates were rearrested, 46.8 percent were reconvicted, and 41.4 percent were reincarcerated. In all, these ex-prisoners committed 326,746 new crimes within three years post-release, including more than 50,000 violent crimes. This corresponded to 2.8 percent of all the serious crime arrests reported in those three years in the nation.

Langan and Levin's Study. Replicating Beck and Shipley (1989), Langan and Levin (2002) also examined the recidivism of newly released state prison inmates in largest study of recidivism to date. Their study tracked 272,111 ex-prisoners from 15 states, representing two-thirds of all prisoners released in 1994, for three years. Similar to Beck and Shipley (1989), Langan and Levin (2002) assessed multiple measures of recidivism—rearrest, reconviction, resentence to prison, return to prison with or without a new sentence—using FBI and state criminal records for felony and serious misdemeanor charges. Finally, Langan and Levin also included both in-state and out-of-state recidivism. Due to the size of the sample and the fact that this study accounts for many of the methodological factors discussed by Maltz that affect the estimates of recidivism among offenders, this study is often seen as one of the defining works on recidivism.

Langan and Levin's (2002) findings are remarkably similar to those found by Beck and Shipley (1989). As shown in Figure 1.3, within three years of release, 67.5 percent of the prisoners were rearrested for a new offense, 46.9 percent were reconvicted for a new crime, and 25.4 percent were resentenced to prison. Additionally, Langan and Levin (2002) also examined rate of return for prison for both technical violations and new crimes. They discovered that 51.8

percent were returned for prison for either a new crime or technical violation within three years of release. The rate of recidivism becomes even more disquieting when examining reoffending within six months of release, with roughly 30 percent of the prisoners being rearrested in that timeframe. Thus, within a mere six months of release, over one-third of releasees had been rearrested.

Overall, the 1994 cohort of state prison releasees accounted for 4.7 percent of all arrests for serious crimes in the three years following their release. In raw numbers, this corresponds to 744,480 charges, with over 100,000 violent crimes. As can be clearly seen, when compared to the earlier findings of Beck and Shipley (1989), the offenders examined by Langan and Levin are being rearrested at a slightly higher rate and are committing more crimes in general and more violent crimes than their 1983 counterparts.

Sabol et al.'s Study. Although less striking than state prisoners, offenders released from federal prisons also have high recidivism rates (Sabol et al., 2000). However, contributing to this lower estimate of recidivism compared to state prisoners may be a methodological artifact due to the measurement of recidivism. Sabol et al. only measured recidivism as the return to federal prison within three years of release. Thus, no data was collected on arrest, reconviction, or reimprisonment to state prisons for this sample. Using this narrow definition of recidivism, Sabol et al. found that 16 percent of the 215,263 federal prisoners released between 1986 and 1994 returned to federal prison within three years. However, the proportion of ex-prisoners returning to prison increased over the 12 years included in the study. Roughly 11 percent of released offenders in 1986 returned to federal prison within three years while this increased to 18.6 percent of ex-inmates released in 1994. Thus, more recent cohorts of released offenders have higher recidivism rates than their counterparts released earlier indicating that prisoners

Figure 1.3. Percent of State Inmates Rearrested, Reconvicted, and Returned to Prison with a New Sentence Within Six Months, One Year, Two Years, and Three Years of Release



Source: Langan, P. A., & Levin, D. J. (2002). Recidivism of prisoners released in 1994. Washington, DC: Bureau of Justice Statistics, U.S. Department of Justice.

being released today are not reintegrating into society as well as offenders in the past (Petersilia, 2003).

International Comparisons. While the United States is unique in its use of incarceration, earning the title of the world's leading incarcerator, it is not alone in its high rates of recidivism among its released prisoners. When compared to the U.S., ex-prisoners in many Western industrialized nations have similar recidivism rates, showing that the majority of inmates continue their criminal behavior following their release from prison. Thus, one could argue that although the use of prison as a response to crime is much higher in the United States, the effectiveness of the prison sanction seems to be quite comparable across Western countries.

Examining the effect of first-time imprisonment among 18-38 year olds in the Netherlands, Nieuwbeerta, Nagin, and Blokland (2009) found that the recidivism rate measured by reconviction within three years surpassed 60 percent. Similarly, Councell (2003) also found high recidivism rates in England and Wales. Measuring recidivism as a reconviction within two years of release, Councell discovered a recidivism rate of 59 percent. Both of these findings are roughly 13 percentage points higher than the rates of reconviction found by Beck and Shipley (1989) and Langan and Levin (2002) in the United States. Put simply, released prisoners in other Western countries are experiencing higher recidivism rates than those released in the U.S. Therefore, unlike America's dominance in the inordinate use of incarceration as a response to the crime problem, the failure of imprisonment to curtail subsequent reoffending is not strictly an American phenomenon. Rather, high recidivism rates of released inmates appear to be relatively common among Western industrialized nations.

Factors Influencing Recidivism

Although the overall recidivism rates of all offenders coming out of prison are quite high, not all offenders have similar recidivism rates. Rather there is much variation among individual offenders, and a variety of factors have been discovered to be associated with an increased rate of recidivism. These main factors include: criminal history—including prior arrests and prior prison sentences (Beck and Shipley, 1989; Gendreau, Little, and Goggin, 1996; Langan and Levin, 2002; Loeber and LeBlanc, 1990; Nagin et al., 2009, Nagin and Paternoster, 1991); the type of crime for which the offender was imprisoned (Beck and Shipley, 1989; Councell, 2003; Langan and Levin, 2002; Nagin et al., 2009; Sabol et al., 2000); and the race, age, and gender of the offender (Beck and Shipley, 1989; Cannon and Wilson, 2005; Councell, 2003; Gendreau et al., 1996; Langan and Levin, 2002; Nagin et al., 2009). Thus, one could argue that prison is more or less of a deterrent depending on the individual characteristics of the offenders being released. For example, prison may be a deterrent to first-time inmates but not those who have experienced prison multiple times. Consequently, to gain a true understanding of recidivism, one fully understand how these individual factors influence the estimates of recidivism.

Criminal History. The variable most consistently shown to be strongly related to subsequent recidivism is an offender's criminal history. In all of the U.S. studies examined, offenders with more extensive criminal histories had higher recidivism rates. Specifically, Beck and Shipley (1989) discovered a positive relationship between the number of prior arrests and post-release rearrest: 28 percent of first-time offenders, 31.1 percent of inmates with only one prior arrest, 48.2 percent with two prior arrests, 54.7 percent with three prior arrests, and 82.2 percent of offenders with 16 or more prior arrests were rearrested within three years of release. Langan and Levin (2002) found remarkably similar results as Beck and Shipley (1989) showing

that 40.6 percent of releasees with one prior arrest, 47.5 percent with two prior arrests, 55.3 percent with three prior arrests, and 82.1 percent with 15 or more prior arrests were rearrested within three years. In fact, in both studies, the number of prior arrests was the strongest predictor of recidivism among released prisoners for both males and females, for all racial/ethnic groups, and for all age groups examined.

Whether or not an offender has previously served time in prison is another criminal history measure found to be associated with subsequent reoffending. In their study of state prisoners released in 1983, Beck and Shipley (1989) reported that previously having been incarcerated was associated with higher rates of recidivism after release. In fact, rearrest for those who had been previously incarcerated was a full 20 percentage points higher than those who were first-time prisoners, with 49.1 percent of first-time prisoners rearrested and 69.1 percent of offenders who had served at least one prior prison term being rearrested within three years of release. In their replication of Beck and Shipley's study, Langan and Levin (2002) also found this trend; however, the percentage of both first-time prisoners and those with prior prison terms who were rearrested within three years exceeded the rates found by Beck and Shipley. Specifically, Langan and Levin discovered 63.8 percent of first-time prisoners were rearrested. Among those with prior prison experience, 73.5 percent were rearrested within three years. Thus, when compared to the 1983 cohort of released prisoners, the 1994 cohort shows a roughly 15 percentage point increase in rearrest for both first-time prisoners and those with prior prison sentences indicating that the more recent cohort had a more difficult reintegration back into society after release (Petersilia, 2003).

Type of Crime. A second factor found to be associated with differential rates of recidivism is the type of crime for which the inmate was imprisoned. Among the 1983 release

cohort, rearrest within three years of release was the highest for those convicted of motor vehicle theft (78.4 percent), burglary (69.6 percent), possessing/receiving stolen property (67.9 percent), larceny/theft (67.3 percent), and robbery (66.0 percent). The lowest rates were found among murderers (42.1 percent), people convicted of negligent manslaughter (42.5 percent), and rapists (51.5 percent). Thus, property offenders, rather than violent offenders had the highest rate of recidivism.

Langan and Levin's (2002) findings concerning the 1994 release cohort were remarkably similar to those of Beck and Shipley (1989). Released inmates with the highest rearrest rates included committed motor vehicle theft (78.8 percent), larceny (74.6 percent), burglary (74.0 percent), robbery (70.2 percent), and possessing/selling illegal weapons (70.2 percent). On the other end of the spectrum, those offenders with the lowest recidivism rates included murderers (40.7 percent), other sexual assaulters (41.4 percent), rapists (46.0 percent), DUI offenders (51.5 percent), and other violent offenders (51.7 percent). Consequently, just as with the Beck and Shipley, the less serious offenders or those offenders with primarily a monetary motive in the cohort were significantly more likely to reoffend after release than their more serious counterparts (Petersilia, 2003).

Although violent offenders were found to recidivate at a lower rate when compared property offenders for state prison releasees, this trend is reversed among released federal prisoners. Offenders who were convicted of a violent offense were most likely to return to a federal prison within three years of release (32 percent). This is slightly less than twice the rate of those convicted of property offenses (17 percent), and more than two times the rate of those convicted of a public order (15 percent) or drug offense (13 percent) (Sabol et al., 2000). However, one must keep in mind that more than two-thirds of the violent offenders in the sample

committed robbery, which was shown to be associated with relatively high recidivism rates in both the Beck and Shipley (1989) and Langan and Levin (2002) studies. Thus, the high proportion of robbers in the sample may be influencing the high rate of recidivism found for violent offenders among the cohort of federal prison releasees.

Differences in recidivism by criminal conviction offense are found internationally as well. In her review of the 2002 prison statistics in England and Wales, Councell found that burglars were most likely to be reconvicted two years after release (76 percent), followed by thieves (73 percent), and robbers (53 percent). The lowest recidivism rates are found for sexual offenders (16 percent), those convicted of fraud or forgery (36 percent), drug offenders (40 percent), and for violent offenders (48 percent). As can be seen, this is consistent with the findings of Beck and Shipley (1989) and Langan and Levin (2002), with less serious offenders possessing higher recidivism rates than those convicted of more serious or violent crimes.

Gender, Race, and Age. Not only do legal variables such as prior arrest and conviction offense have an impact on subsequent reoffending, but demographic variables have also been found to be associated with an increased risk of recidivism (Beck and Shipley, 1989; Cannon and Wilson, 2005; Councell, 2003; Gendreau et al., 1996; Langan and Levin, 2002; Sabol et al., 2000). These differences are much smaller than the differences found in the offending rate among the general population, but nonetheless, the differences still remain. Specifically, differences in recidivism have been found among the sexes, races, and different age groups.

Among all the U.S. studies examined, males were shown to exhibit higher rates of rearrest. Beck and Shipley (1989) found that males were more likely than females to be rearrested, reconvicted, and reincarcerated within three years after their release from prison (62.2 versus 51.9 percent, 47.3 versus 38.7 percent, and 41.9 versus 33.0 percent, respectively).

Similarly, Langan and Levin also found that the males in their 1994 cohort of releasees had higher rates of rearrest (68.4 versus 57.6 percent), reconviction (47.6 versus 39.9 percent), return to prison with a new sentence (26.2 versus 17.3 percent), and return to prison with or without a new sentence (53.0 versus 39.4 percent) within three years post-release. This sex difference also remained when examining federal prisoners with 16.2 percent of males and 11.6 percent of females returning to federal prison after three years (Sabol et al., 2000).

The second demographic variable consistently related to recidivism is the race of the offender. Just as with the rate of offending in the general population, nonwhite prison releasees recidivate at higher rates than their white counterparts. Evidence for this racial differential has been found in all three major studies of U.S. recidivism. Among the 1983 cohort of releasees, blacks had higher rearrest (67.1 versus 58.7 percent), reconviction (49.9 versus 44.2 percent), and reincarceration (45.3 versus 38.0 percent) rates compared to their white counterparts (Beck and Shipley, 1989). These findings were replicated 11 years later in the 1994 cohort examined by Langan and Levin (2002). Specifically, blacks possessed higher rearrest (72.9 versus 62.7 percent), reconviction (51.1 versus 43.3 percent), return to prison with a new sentence (28.5 versus 22.6 percent), and return to prison with or without a new sentence (54.2 versus 49.9 percent) rates within three years than white releasees. Finally, Sabol et al. (2000) confirmed these findings among released federal prisoners. Almost 25 percent of black offenders were returned to federal prison within three years of release, while only 13.4 percent of white offenders were returned in that same time period.

The final demographic variable consistently shown to be related to recidivism is the age of the offender. In general, younger offenders are at a greater risk of recidivism than older offenders. Among state prisoners, the relationship between age and subsequent recidivism is a

linear and negative one. Regardless of how recidivism is measured—rearrest, reconviction, return to prison with a new sentence, or return to prison with or without a new sentence— younger offenders have substantially higher rates of reoffending than older releasees. Beck and Shipley (1989) found that those 17 or younger were over 20 percentage points more likely to recidivate after release regardless of how recidivism was measured than those 45 or older. This finding was replicated by Langan and Levin (2002) with a cohort released 11 years after the sample studied by Beck and Shipley. Langan and Levin discovered 82.1 percent of releasees under 18 were rearrested within three years compared to 45.3 percent of those age 45 or older. Across the other three measures of recidivism (reconviction, return to prison with a new sentence, and return to prison with or without a new sentence), those under 17 had rates ranging from 11 to 22 percentage points higher than their older counterparts.

Among federal prisoners, the relationship between age and recidivism is no longer linear (Sabol et al., 2000). Although the oldest offenders in the release cohort show the lowest recidivism rates, the youngest offenders among the releasees no longer recidivate at the highest rate. Instead, those offenders in the middle age range have the highest rate of return to federal prison. More specifically, 13.9 percent of releasees under the age of 21 returned to prison within three years, while 17.7 percent between the ages of 21 and 40 recidivate, and 11.0 percent of those over age 40 were back in federal prison within three years of release. However, it is still instructive that just like found with state prisoners, the oldest offenders in the cohort were the least likely to recidivate once released from prison.

Overall, since the 1970s, incarceration has become the nation's answer to the crime problem. With over 2.4 million people currently behind prison bars on any given day in this country, it is imperative that policymakers and scholars understand the long-lasting implications

of this practice. Although, in theory, prisons have the possibility of reducing recidivism, the research has not supported this proposition. Instead of resulting in a decrease of post-release criminal behavior, prisons, as they are currently being run, seem to contributing to the very problem that they are attempting to solve, with the majority of offenders continuing their criminal behavior after their stay behind bars.

THE EFFECTS OF IMPRISONMENT: SPECIFIC DETERRENCE

With such a vast number of people incarcerated each day in the United States, it is imperative that the effects of being imprisoned are well-understood. However, not all scholars agree on the consequences of using imprisonment as a response to crime. In fact, there are two competing perspectives concerning what effects imprisonment has on released offenders: prisons as a specific deterrent and prisons as a criminogenic experience. The first perspective—prisons as a specific deterrent—argues that prisons will result in a decrease in criminal behavior. This perspective claims that the costs of going to and serving time in a prison will outweigh the benefits acquired by the crime. Because offenders are rational, once they experience this harsh and severe sanction, they will be deterred from committing crime after they are released.

On the other hand, the second perspective—prisons as a criminogenic experience contends that the prison experience will lead to an increase in post-release criminal behavior among inmates. This perspective follows the logic of labeling theorists who argue that the criminal sanction can have the unintended consequence of increasing criminal behavior and contributing to the very problem it is trying to address. Proponents of this perspective argue that prison is a social experience that exposes inmates to a variety of criminogenic risk factors, such as associations with antisocial peers, the severing of social bonds, and being labeled an ex-con.

This exposure then results in an increased likelihood of criminal behavior once released. These two competing perspectives—prisons as a specific deterrent and prisons as a criminogenic experience—will be elaborated below.

During the past 30 years, the United States has engaged in a "get tough" movement that has focused on punishing offenders more severely in the hopes of deterring their future criminal behavior (Clear, 1994; Currie, 1998; Garland, 2001). At least in part, this movement has its basis in deterrence theory, which postulates that crime is the result of a rational decision-making process where offenders calculate both the costs and benefits associated with criminal behavior. Based on the ideals of the classical school of criminology, deterrence theorists argue that people seek out situations that bring them pleasure while avoiding those that cause them pain (Beccaria, 1983[1775]). If the costs of crime—in this case, imprisonment—outweigh the benefits, a rational person will choose to not commit the crime; however, if the potential rewards of the crime outweigh the costs, the criminal act will be pursued (Becker, 1968; Cook, 1980).

Deterrence theorists thus are reductionalists in that they reduce the prison experience down to a simple cost-benefit analysis (Nagin et al., 2009). Prison is not seen as a social experience that offenders live through; rather, it is reduced to a possible factor that offenders weigh when determining whether or not to commit a crime. According to deterrence theorists, if the pains or costs of committing a crime are calculated to be more severe than the pleasure or benefits to be received from the crime, people will be deterred from engaging in that behavior. Therefore, correctional policy based on deterrence postulates that the criminal sanctions given to offenders should be painful enough to make the individual never want to experience it again and thus outweigh the benefits or rewards of the crime. If the sanction achieves that goal, desistance in criminal behavior will be the result. Consequently, policymakers have sought to maximize the

pains of crime by increasing the use of and lengthening prison sanctions in the past 30 years in the hopes of it being a deterrent to offenders. However, this "get tough" movement has not resulted in a significant reduction of crime as predicted by deterrence theorists (Currie, 1998; DeFina and Arvanites, 2002; Lynch, 1999, 2007; Marvell and Moody, 1995, 1997).

When analyzing the deterrent effect of imprisonment, it is important to distinguish between the two types of deterrence: general and specific. General deterrence involves deterring the public at large by making examples out of specific deviants. Thus, punishing an offender is not intended to be a deterrent for that particular individual; rather, the punishment's goal is to deter those in society that are contemplating committing a criminal act. By imprisoning an offender who has been caught, it is hoped that this will send a clear message to others that the costs of the crime exceed the benefits. In this case, imprisonment is not intended to stop the subsequent criminal behavior of those offenders who have been caught and punished; instead, it is meant to curb the future criminal behavior of those who have yet to commit or be caught committing a crime.

On the contrary, specific deterrence focuses on the actual offender who is caught and being punished, which is the focus of this dissertation. Unlike general deterrence, the sanction is not intended to have any effect on anyone else except the offender who is actually experiencing the punishment. The sanction imposed on the offender is meant to be so severe and harsh that the offender will never want to experience it again in the future. In other words, when the offender contemplates committing a crime in the future, it is hoped that he/she will be discouraged from committing the criminal act because the cost, which they have personally experienced in the past, outweighs any potential benefits the crime may offer.

More specifically, deterrence theory argues that if the punishment for committing a particular behavior is both certain (i.e., has a high probability that the act will be followed by punishment) and severe (i.e., the level of punishment exceeds the benefit of the crime), crime will no longer be appear to be rational choice for an offender and future criminal behavior will be deterred (Lynch, 1999; Nagin, 1998). Although certainty of punishment is an important component of deterrence theory, it is not particularly relevant to correctional policy. Certainty is more applicable to the actual apprehension of the offender after committing a particular criminal act. Thus, this component is especially applicable to the role of the police in capturing offenders after they commit the crime. Since the correctional system essentially does not have an impact on the actual arrest and apprehension of offenders, the deterrent effect of being sentenced to time behind bars in a prison or jail is not due to the certainty of that sanction. Instead, when examining the impact of the imprisonment on the future criminal behavior of offenders, deterrent effects and apprehension as a deterrent.

As stated above, deterrence theorists argue that the harsher and more severe the sanction, the greater deterrent effect. This is due to the fact that more severe sanctions should make the estimate of crime more costly. As the consequences of crime become more painful, the likelihood that an offender will choose to engage in criminal behavior decreases because the costs of the crime become greater than any benefit gained by committing the crime. Given that being sentenced to prison is thought to be one of the most severe sanctions able to be imposed on offenders—excluding the death penalty—deterrence theories predict that spending time behind bars will result in a reduction of future criminal behavior.

Using the logic that harsher or more severe sentences would result in less crime, deterrence theorists make three specific predictions concerning the effect of imprisonment on

post-release criminal behavior. First, they argue that offenders who are given prison sentences compared to those given non-custodial sanctions will be more deterred from crime. Prison is seen as the harshest sanction an offender can be given because they are removed from society, cut off from their family and friends, and placed in an undesirable environment. Second, deterrence theorists contend that offenders who serve longer periods of time behind bars versus less time will be less likely to reoffend once released. Again, since prisons are seen as such an undesirable place, being forced to live in such an environment for a longer period of time should result in a more painful experience when compared to spending a shorter amount of time behind bars. Finally, inmates who experience harsher prison conditions are expected to be less likely to reoffend. If the conditions of the prison experience are exceptionally painful (e.g., few or no visitors allowed, spending many hours locked in their cells, housed in a higher security level), offenders will estimate the prison sanction as a situation that is extremely difficult and one that should be avoided in the future. Having this view of prison as being a very high cost of crime, offenders who experienced harsh prison conditions should be more deterred than those offenders who have a less difficult prison experience.

As evidenced by the high recidivism rates of both state and federal prisoners, the idea that imprisonment is a specific deterrent is questionable. However, one must be careful in interpreting the high rate of recidivism as evidence that prisons are completely ineffective. Just examining the recidivism rates of released prisoners does not provide any information about the crime that would have been committed if the offender had not been in prison. It also does not allow for a comparison of the recidivism rates of those sentenced to non-custodial sentences. Thus, in order to determine the specific deterrent effect of imprisonment, it is imperative that studies assess similar individuals who have been sentenced to non-custodial versus custodial

sanctions, similar individuals who have been sentenced to more time in prison versus less time, and similar individuals who have been sentenced to harsher versus less harsh prisons to determine the true effect of imprisonment on crime.

Non-custodial versus Custodial Sentences

Four reviews of the existing literature on the effects of non-custodial sanctions versus custodial sanctions have been conducted in recent years. Each of these reviews has generally found that custodial sanctions are either more criminogenic or have similar effects on recidivism as non-custodial sanctions, thus showing little support for the specific deterrent effect of prison. In 2000, Gendreau, Goggin, Cullen, and Andrews conducted one of the first meta-analyses on the effects of non-custodial versus custodial sanctions. This meta-analysis was then expanded in 2002 by Smith, Goggin, and Gendreau. In both systematic reviews, they found that incarceration was associated with a seven percent increase in recidivism when compared to community sanctions; however, this effect was reduced to zero when weighting for sample size. Even more telling, in the Smith et al. meta-analysis, it was discovered that when the sample was restricted to only studies with a strong quality of design, the criminogenic effect of a custodial sanction was even stronger, with incarceration associated with an 11 percent increase in recidivism.

Four years later, Villettaz, Killias, and Zoder (2006) conducted a third review examining the effect of non-custodial versus custodial sanctions on recidivism. They found in 41 percent of the comparisons, non-custodial sanctions were associated with lower recidivism; in seven percent of the comparisons, custodial sanctions were associated with lower recidivism; and in 52 percent comparisons, no significant differences between non-custodial and custodial sanctions in recidivism were found. Overall, the review found prisons had either a criminogenic or null effect on recidivism.

Additionally, Nagin, Cullen, and Jonson (2009) found results consistent with the other reviews. Examining 48 studies (six experimental/quasi-experimental, 11 matching, and 31 regression-based studies), incarceration was found to have either a null or slight criminogenic effect on recidivism. Therefore, across four reviews of the literature, little evidence has been found for a specific deterrent effect of prisons. Instead, the research has shown that incarceration generally has either a slight criminogenic or null effect on recidivism when compared to non-custodial sanctions.

More Time versus Less Time in Prison

Just as the research on non-custodial versus custodial sanctions has found no specific deterrent effect, the research on serving more versus less time in prison also shows a criminogenic effect of prison, not a specific deterrent effect. There are currently three reviews of the literature focusing on the effect of time served and recidivism. Gendreau et al. (2000) and Smith et al. (2002) revealed serving more time is associated with a three percent increase in recidivism when compared to those serving less time in prison. Nagin et al. (2009) also found no support for the specific deterrent effect of serving a longer sentence. Reviewing two experimental and 17 non-experimental studies, Nagin et al. concluded that serving more time had either a null effect or a slight criminogenic effect on recidivism with no studies showing a deterrent effect. Thus, there is no support in the three major reviews of the literature for the specific deterrence argument calling for longer sentences.

All of the above reviews are consistent with findings in Beck and Shipley (1989), Langan and Levin (2002), and Sabol et al. (2002). Among state prisoners, both Beck and Shipley and Langan and Levin failed to find a significant relationship between time served in prison and subsequent recidivism. However, when examining federal prisoners, Sabol et al. (2000)

discovered that time served in prison had a positive relationship with recidivism. In other words, offenders who served longer prison sentences were more likely to return to federal prison within three years when compared to offenders who spent less time behind bars. Specifically, 13.7 percent of releasees who served less than one year in prison recidivated, while 25.3 percent of inmates serving more than five years returned to prison within three years of release. Consequently, just as with the reviews of the research, the three major national studies on recidivism also show that serving more time in prison has either a null or iatrogenic effect on the subsequent offending of released prisoners.

Harsher versus Less Harsh Prison Conditions

There is also little support of the specific deterrence argument that harsh prison conditions lead to lower recidivism rates. Using a sample of federal prisoners, Chen and Shapiro (2007) found that inmates placed in higher security levels do not have lower levels of recidivism than those placed in lower security levels. In fact, they discovered that being housed in a higher security level was associated with either an increase in recidivism or no difference when compared to those housed in lower security levels. Thus, again, no specific deterrent effect is found to be associated with the use of prisons to reduce post-release criminal behavior.

THE EFFECTS OF IMPRISONMENT: PRISONS AS A CRIMINOGENIC EXPERIENCE

As shown above, the existing research is not supportive of the specific deterrent argument of imprisonment. Many scholars do not find this to be surprising and have long argued that prisons are exacerbating the very problem they are trying to solve. These scholars argue that prisons have a criminogenic influence on those who enter its gates. Rather than the prison experience leading to a reduction in criminal behavior, imprisonment actually results in an increase in crime after release. They argue that the prison is a social experience for those who enter it. Prisons are seen as criminogenic experience representing a fundamental change in a person's social life. When sentenced to prison, offenders are plucked out of their community in free society and placed into another community within the prison. In this prison environment, offenders are exposed to a variety criminogenic risk factors: oppositional subcultures, associations with other offenders, and the severing of bonds with family, work, school, and civil society. Additionally, even after release, offenders have a difficult time re-entering free society due to the criminal stigma or "mark" attached to them, making obtaining work and re-establishing relationships a daunting task.

Many of these aforementioned factors are predicted by criminology's major theories to result in criminal behavior. Association with criminal peers and exposure to an oppositional subculture is discussed in differential association/social learning theory (Sutherland, 1947; Akers, 1977); the severing of social bonds is the main argument in Sampson and Laub's (1993) age-graded social bond theory; the criminogenic impact of being exposed to strain- and coercion-filled environments are presented general strain theory and differential coercion theory (Agnew, 1992, 2006; Colvin, 2000); and finally the stigma and label attached to ex-prisoners is claimed by labeling theory to result in future criminal behavior (Lemert, 1951). Consequently, as hypothesized by many of the dominating theories in criminology, prisons are expected to have an iatrogenic effect leading to an increase in criminal behavior once released.

Prisons as "Schools of Crime"

Historically, the dominant manner in which scholars have explained the criminogenic effect of imprisonment was to portray prisons as schools of crime. This idea that prisons are a

place where offenders go and "learn" how to be a better criminal is based in differential association/social learning theories. Edwin Sutherland developed his differential association theory to challenge the biological and psychological theories of the time. These theories placed the origins of crime within the individual and not the social setting. In contrast, Sutherland argued that crime was not due to genetic or biological factors; instead, he claimed that criminal behavior was the direct result of learning the attitudes, techniques, and neutralizations of the behavior. Sutherland presented his complete social psychological explanation of crime in 1947, arguing that individuals commit crime when they differentially associate (e.g., interact with groups or people in which they are exposed to various definitions, norms, and values) with criminal others and are exposed to an excess of definitions (e.g., the attitudes or meanings attached to a given behavior) favorable to the violation of the law as opposed to those unfavorable to the violation of the law.

Sutherland's ideas were further elaborated in 1966 by Burgess and Akers and later in 1977 by Akers in his social learning theory. Social learning theory retained Sutherland's concepts of differential association and definitions favorable to the violation of the law, but also specified the mechanisms of learning that were needed in order for criminal behavior to result. More specifically, it explained exactly how criminal behavior was both acquired and maintained. Consequently, social learning theory added the concepts of imitation and reinforcement to Sutherland's original theory. Imitation was seen as crucial in the acquisition process and occurs when, after observing a particular behavior, the individual engages in that behavior. Differential reinforcement was the critical element of the maintenance of a certain behavior and deals with the actual or anticipated consequences a person experiences when engaging in a behavior. If people are or believe they will be rewarded when committing a particular act, the likelihood that

act will be repeated increases. However, when a people are punished or anticipate punishment for a specific act, they will be less likely to engage in that behavior in the future.

It is clear how prisons can be seen as having a criminogenic influence on its inhabitants according to social learning theory. Based on this belief, it has long been argued that prisons are not places of reform; rather they are "schools of crime" where criminal behavior and tendencies are learned, strengthened, and solidified (de Tocqueville, 1968; Jaman, Dickover, and Bennett, 1972; Latessa and Allen, 1999; Shaw, 1930; Walker, 1987). For example, when discussing the ideal prison conditions, de Tocqueville (1968, p. 72) argued:

Everybody has agreed that habitual communication between convicts can only lead to intellectual and moral disasters, and consequently that no improvement whatever can be anticipated if, to begin with, separation of one from the other does not take place to isolate each morality, or more exactly, each immorality.

Similarly, Shaw (1930), when telling the life history of Stanley, tells how when Stanley spent time in a House of Correction, or as Shaw describes, a "House of Corruption," Stanley was given advice by other inmates in how to better his criminal behavior. In one instance, Stanley was told by his cellmate, "the next time you pull anything off, pick out a racket where there's dough...get into a respectable racket, so you can dress well and mingle in society" (p. 153). Further, Stanley states that his cellmate, "promised to help me in working out my plans, and I had a whole year to do it in" (p.154). Thus, as can be clearly seen, within the institution's walls, inmates are exposed to other criminals who provide an "education" in how to continue and better commit their criminal behavior once released.

While incarcerated, inmates are almost exclusively exposed to criminal others. The majority of the people that inmates have daily interaction with are criminal in nature, and thus,

their differential associations are predominately antisocial. These associations result in the exposure to values that are favorable to the violation of the law as well as role models for learning new criminal behaviors as well as to reinforcement for continued antisocial behavior. In fact, prisons are often marked with an oppositional subculture that stands in stark contrast to the prosocial and conformist values in which the sanction is trying to instill in its inmates.

Many classic studies have explored the origins of this oppositional subculture. One perspective, deprivation theory, argues that when inmates are placed in the total institution of the prison they are exposed to a very hostile environment full of adversity. Behind the prison walls, inmates are stripped of many of their freedoms. In response to these "pains of imprisonment," inmates are forced to adapt to these conditions by developing particular niches and argot roles (Clemmer, 1940; Sykes, 1958; Toch, 1977). In the process of this adaptation, inmates form an oppositional subculture where they stand as a solidified unit against the prison administrators and staff and conventional society in general. This subculture allows the inmates to feel a sense of identity in light of the fact that they are behind bars and society has rejected them (Clemmer, 1940). In essence, offenders become prisonized and begin to abide by the unwritten rules created by the inmates (Clemmer, 1940). This culture values violence, inmate solidarity, and above all hostility to anything or anyone that represents conventional society.

The other approach to explaining the oppositional subculture characteristic of prisons is based on the work of importation theorists. Importation theorists argue that the criminal subculture present in the prison is not due to the deprivations or the pains of imprisonment of being behind bars (Carroll, 1974; Irwin and Cressey, 1962; Irwin 1980, 2005; Wacquant, 2001). Rather, the antisocial values, beliefs, and opposition to conventional society are carried into the facility by the individual inmates. As Irwin (1980) poignantly states, inmates do not come into

prison as blank slates ready to be shaped and molded by the prison environment; instead they import in their criminal values, roles, and expectations into the prison. Consequently, the inmate subculture or convict code is not a response to the harsh realities of prison life; rather, it is an extension of the criminal lifestyles and beliefs of those who enter the prison walls.

The transfer of criminal values from society into the prison is best illustrated by the importation of street gangs into prisons (Carroll, 1974; Irwin, 1980, 2005; Jacobs, 1977; Wacquant, 2000, 2001). As Wacquant (2000, 2001) argues, in the U.S., the prison and the ghetto are meshing together with the prison now serving as a surrogate ghetto. He explains that the prison has become more like the ghetto in that the "code of the street" (Anderson, 1999) and ethnic-based street gangs have taken over the prison setting. No longer is the prison dominated by one solid inmate culture; instead, there are multiple street gangs that continue their criminal enterprises behind bars. Although, there is no longer a singular inmate code, just as in the street, all of these gangs still place a premium on toughness, violence, and the rejection of conventional society. Thus, the culture within the prison remains one where oppositional values flourish and are expected while conventional values are fervently opposed.

Since the inception of the prison in the United States, policymakers have understood that housing criminals together can have detrimental effects. Both the Auburn and the Pennsylvania prison systems sought to control the interactions of inmates in order to reduce the corrupting influence that inmates could have on one another. The Auburn System, or the congregate system, was characterized by inmates working together in silence during the day and being placed in solitary confinement at night. In contrast, the Pennsylvania System, or the separate system, required complete separation, day and night, of inmates from one another. At no time were inmates allowed to speak or even see one another. Although both systems had their own

rules and regulations for running the institution, the underlying reason for the complete control over inmate communication was to reduce the associations between inmates and the transmission of criminal values among the prison population. Consequently, by entirely restricting the interactions of inmates, policymakers hoped to eliminate any possibly of an inmate subculture arising within the prison walls.

Although there is an extant amount of research showing the vitality of social learning theory in explaining crime (Alarid, Burton, and Cullen, 2000; Akers, Krohn, Lanza-Kaduce, and Rodosevich, 1979; Brenzia and Piquero, 2003; Haynie, 2002; Pratt, Cullen, Sellers, Winfree, Madensen, Daigle, Fearn, and Gau, in press; Sutherland, 1937; Warr and Stafford, 1991; Warr, 2002), one study in particular focuses on the effects of peers within an institution on future criminal behavior (Bayer, Hjalmarsson, and Pozen, 2009). Using a sample of over 8,000 individuals serving time in juvenile correctional facilities, Bayer et al. attempt to determine the effect that criminal peer associations developed within the correctional setting has on postrelease criminal behavior. They found that peer effects reinforce an individual's criminal behavior. More specifically, "exposure to peers with a history of committing a particular crime increases the probability that an individual who has already committed the same type of crime recidivates with that crime" (p. 108, emphasis in original). However, if the individual does not have a history of committing a certain type of crime, being exposed to peers does not have a strong effect. Consequently, within the juvenile institution, exposure to peers mainly serves a reinforcing or maintenance role in continuing the same type of criminal behavior once released.

Overall, the logic of social learning would lead one to conclude that prisons would have a criminogenic effect on inmates. Once behind the prison walls, inmates are exposed to deviant associations, definitions favorable to the violation of the law, role models to imitate and learn

from, and people who will reinforce behavior that is in opposition to the values proscribed by conventional society. Consequently, it comes as no surprise to social learning theorists that the reviews of the effect of imprisonment (Gendreau et al., 1999; Nagin et al., 2009; Smith et al., 2002; Villettaz et al., 2006) generally find that prisons are associated with either a null or criminogenic effect on post-release criminal behavior.

Although the prisons as a school of crime argument has been the dominant explanation for the criminogenic effect of prisons, alternative explanations for the criminogenic effect of prisons exist. Virtually every criminological theory, with the exception of rational choice/deterrence theory, would predict prisons have either no effect or an iatrogenic effect on criminal behavior. Prisons are seen as being associated with many of the risk factors that are predicted to lead to criminal behavior, such as the severing of conventional social bonds, increasing the strain placed on the individual, and imposing a stigmatizing label of ex-prisoner on newly released inmates. These alternative explanations are discussed in the sections that follow.

Age-Graded Social Bond Theory

The first alternative explanation for the criminogenic influence of imprisonment is based off of Sampson and Laub's (1993) age-graded social bond theory. The key variable in this theory is the social bond, which explains both the continuity and desistence of criminal behavior across an individual's life course. Sampson and Laub (1993) and later Laub and Sampson (2003) argue that when offenders, regardless of their childhood characteristics and earlier risk factors, enter into a quality bond (such as work in a good job or a healthy marriage) at any point in their lifetime and that bond is associated with social capital, the offender will desist from crime due to the informal social control exerted by the bond. However, when these conventional

social bonds are severed, the offender is then "free" to commit criminal behavior. One such experience that can knife off many conventional social bonds for an individual is a prison sentence. Once a person is placed behind the prison walls, their bonds with work and family are either completely or severely detached. This lack of informal social control then allows the offender to freely engage in criminal behavior.

Sampson and Laub (1993) empirically tested their theory using Sheldon and Eleanor Glueck's (1950) dataset of 500 juvenile delinquents matched to 500 nondelinquents. They specifically examined the impact of incarceration on both subsequent adult social bonds and future criminal behavior. In their reanalysis of the Glueck data, they found that length of juvenile and early adulthood incarceration had nonsignificant effects on later criminal behavior. In fact, Sampson and Laub argued that, in terms of a direct effect, "incarceration is unimportant in explaining crime over the life course" (p. 165).

Although imprisonment was not directly associated with criminal behavior, this did not refute Sampson and Laub's theory, nor did it mean that imprisonment had no effect whatsoever on future criminal behavior. Rather, they contend that incarceration has indirect effect on criminal behavior by knifing off work and marital social bonds. Thus, adult social bonds mediate the relationship between incarceration and post-release criminal behavior. Again, using the Glueck's data, they found that being incarcerated as an adolescent or young adult had a significant negative impact on job stability, which then was associated with a greater likelihood of criminal behavior. They also discovered that incarceration disrupted other adult social bonds, such as marital attachment, which in turn, was associated with an increased risk of criminal behavior. Thus, Sampson and Laub's theory was empirically confirmed while demonstrating a criminogenic effect of incarceration through the severing of quality adult social bonds.

General Strain Theory/Coercion Theory

A second explanation for the criminogenic effect of imprisonment is drawn from Agnew's (1992, 2006) general strain theory and Colvin's (2000) coercion theory. Building upon his 1985 work and the work of Merton (1938, 1968), Agnew introduced his general strain theory in 1992. In this theory, Agnew presents three types of strain, a theory of intervening variables, and discusses the role of negative affective states. He argues that when individuals are unable to achieve positively valued goals, experience the removal of positively valued stimuli, and/or are presented with noxious stimuli, they experience strain and a corresponding pressure to alleviate the strain due to the negative affective states (e.g., anger) produced. As a way to ease or escape this strain and negative affective state, individuals often resort to criminal behavior. Additionally, Agnew (2001) explained when strains are seen as unjust, high in magnitude, associated with low social control, and create pressures or incentives to engage in crime, they are very likely to lead to a criminal coping response.

Building off of Agnew's presentation of noxious stimuli strain, Colvin presented his differential coercion theory in 2000. In his theory, Colvin contends that that exposure to a coercive environment fosters future criminal behavior through social-psychological deficits that are conducive to subsequent criminal behavior. In other words, the relationship between coercion and subsequent criminal behavior is mediated by anger, low-self control, the weakening of social bonds, and coercive ideation that exposure to a coercive environment fosters. Similar to Agnew, Colvin argues that there are certain dimensions of coercion that are more conducive to criminal responses. The first is the degree of the coercive force, or the magnitude of the coercion. The second is the consistency of the coercion, or how often the coercion is applied.

The greater the exposure and intensity of the coercion, the more likely an individual will engage in criminal behavior.

One situation that encompasses the strains and coercions discussed in these theories is the prison experience. Not only is prison a stressful environment, but it also encompasses those strains and coercions that both Agnew and Colvin argued to be most conducive to a criminal response. Behind the prison walls, inmates are plucked from their communities and placed into the harsh prison environment where exposure to aversive stimuli and extremely coercive conditions is a common experience. On a daily basis, inmates are controlled, stripped of their autonomy, exposed to violence, are likely to be victimized, and are deindividualized. Prisoners are essentially trapped in this coercive environment for many days, months, or even years with little chance of relief. Thus, the strains and coercions that offenders are exposed to are often high in degree or magnitude, applied consistently over a long duration of time, and create incentives to engage in criminal behavior as a means to protect themselves (Blevins, Listwan, Cullen, and Jonson, in press).

Additionally, as explained above, the prison experience knifes off social bonds with conventional others, allowing the inmates to "freely" engage in criminal behavior. Thus, as predicted by these two theories, it is expected that the harsh conditions characteristic of the prison environment would foster much anger or frustration conducive to a criminal coping response. Consequently, instead of a severe sanction, such as a prison sentence, resulting in a deterrent effect, it is expected that the exposure to the strains and coercions that are commonplace in a prison, will result in conditions that encourage future criminal behavior.

Labeling Theory

Another explanation for the criminogenic influence of imprisonment is drawn from the work of labeling theorists. Emerging as a dominant perspective in the late 1960s and 1970s, labeling theory essentially argues that publicly sanctioning individuals for committing crime can have the unintended consequence of resulting in more, rather than less, criminal behavior (Cole, 1975; Cullen and Cullen, 1978). In other words, efforts by the criminal justice system to stop crime by publicly shaming and punishing criminals do not have a deterrent effect; instead, these efforts exacerbate the very problem they are attempting to control (Lemert, 1951; Schneider, 1975; Tannenbaum, 1938).

This public sanctioning, particularly when done in a stigmatizing manner (Braithwaite, 1989), and the treatment of a person as a "criminal" results in the internalization of a criminal self-concept within the individual. Offenders who have this criminal self-conception often fall victim to a self-fulfilling prophecy (Merton, 1968), where they act in accordance to their new criminal identity. In other words, offenders' self-concepts undergo a fundamental change when they are sanctioned and they begin to view themselves as the criminals they are being treated as and thus act accordingly.

Further elaborating on the effect of the criminal sanction, Lemert (1951) distinguished between primary and secondary deviance. Primary deviance is the result of various sociological, psychological, and cultural sources. This initial experimentation with deviance is not seen as a core element of the individual's self-identity. Rather, it is a fleeting, temporary act committed by the individual that they are able to rationalize. Thus, after engaging in primary deviance, the individual does not develop a criminal identity. Since this individual does not have a criminal self-concept, it is unlikely that this primary deviance will stabilize and continue in the future.

In contrast, secondary deviance occurs after the sanctioning of an individual for some wrongdoing. One consequence of this societal reaction is that the offender becomes labeled or marked in the community as a "criminal." As others begin to learn of this behavior, they begin to treat the individual in accordance to this criminal label by showing disapproval and viewing the person as a "bad" or untrustworthy individual. The only characteristic that is assigned to the individual is that of being a criminal; the person, in essence, loses all other aspects of his/her identity. At this point, the person must find a way to cope with this new criminal "master status." One response is to embrace this new criminal identity and act in accordance to that self-conception (Becker, 1963).

Not only does the criminal internalize this criminal identity, but society at large also further isolates the offender by blocking labeled offenders from many conventional activities (Petersilia, 2003; Travis, 2005). When a person is given the criminal label, many prosocial activities and relationships are either severed or blocked for the individual. For example, once convicted, offenders often find that family members and friends begin the distance themselves. The "criminal" is excluded from social functions because they are seen as trouble or disreputable, and romantic, intimate, and friendly relationships are ended. In essence, the offender is seen as a liability that no one wants to associate with. As a response, the criminal is drawn to others who carry the same label and hardships, which only reinforces their subsequent criminal behavior.

Prison, as opposed to other non-custodial criminal justice sanctions, is seen as having an especially consequential effect on offenders. A prison sentence physically removes the individual from the community and places them in a total institution where they are completely isolated from free society. As a result, those in the community often view prisoners as being

extremely hardened and dangerous criminals who are to be feared. Thus, the label attached to ex-prisoners is a particularly stigmatizing and damaging one.

Additionally, within the prison walls, offenders are treated as criminals deserving of the punishment being imposed upon them. They are stripped of their freedom, demanded to be compliant, and expected to take responsibility of their wrongdoing. The offender is not seen as anything but a criminal. Thus, the entire prison experience surrounds the individual with reminders of their criminal behavior, which is conducive the internalization of a criminal self-identity. Further, incarceration results in the long-term separation of offenders from conventional others while providing the inmates with lengthy contact with criminal peers who are facing the same stigmatization. Dealing with similar hardships, these offenders associate with one another and further reinforce each other's criminal self-conceptions, resulting in the continuance of the offenders' criminal behavior.

Once released from prison, the stigma of being an "ex-con" continues to have profound effects on both participation in civil society and in the workforce. Concerning participation in civil society, the criminal label has the largest impact on an individual's right to vote. In the United States, felon disenfranchisement, or the loss of voting privileges after a felony conviction, is a reality for over five million individuals, with blacks especially affected (Manza and Uggen, 2006). Although Maine and Vermont allow prisoners to vote even while incarcerated, the other 48 states deny prisoners the right to vote. Even when released, 35 states prohibit parolees from voting (Manza and Uggen, 2006; Petersilia, 2003; Travis, 2005). Consequently, the stigma of being a prisoner or ex-prisoner prohibits individuals from practicing full citizenship in the United States.

Although losing the right to vote may not seem to be a severe hindrance for ex-prisoners, Manza and Uggen (2006) discovered that this can, in fact, have an impact on criminal behavior. Civic participation is seen as one way an individual can bond with the community and identify with its norms and values. Denying this right can lead to a sense of alienation or disconnect between the offender and the community. In essence, losing the right to vote is a form of civil death. This, in turn, can be conducive to criminal behavior by isolating the individual from governmental processes. Utilizing the 2000 Youth Development Study data, Manza and Uggen (2006) found a significant relationship between voting and criminal behavior. Specifically, people who voted, controlling for prior history and demographic variables, reported significantly less self-reported deviant or criminal acts. Similarly, in 33 in-depth interviews, Manza and Uggen found that disenfranchised felons had little faith in the government, often viewing politicians with disdain, and view the banning of voting as an additional and unnecessary punishment imposed upon them. Losing the right to vote was likened to never regaining full citizenship status and being "exiled" from the larger community, with many offenders stating that it was another stigma they had to learn to cope with after being convicted (p. 155).

Along with voting, the stigma of being a labeled a criminal also has profound effects on obtaining work. It is well documented that a criminal conviction significantly reduces employment prospects and the subsequent income earned (Freeman, 1992; Grogger, 1992; Holzer, 1996, 2007; Holzer et al., 2007; Pager, 2003, 2007; Waldfogel, 1994; Western, 2003, 2006). Although ex-prisoners are barred from obtaining employment in certain occupations, such as child care, education, medicine, law, real estate, and as barbers (Petersilia, 2003; Travis, 2005), in many cases, it is illegal for employers to blatantly exclude ex-prisoners from their hiring pool. However, recently released offenders still confront much job discrimination due to

the stigma of having served time in prison (Pager, 2007; Petersilia, 2003; Travis, 2005). This is particularly frustrating for many released prisoners because finding and maintaining employment is a condition of their parole, and the mark of being an ex-con makes fulfilling this condition extremely difficult.

Many studies have been conducted to examine prison's impact on post-release employment prospects. Holzer, Raphael, and Stoll (2002) discovered that 61 percent of employers "probably would not" or "definitely would not" hire an individual with a criminal record. This is in stark contrast to the over 90 percent of employers who would "probably would" or "definitely would" hire individuals on welfare or with a GED. Thus, ex-prisoners are at the bottom of the hiring hierarchy, with employers more cautious of hiring ex-offenders than any other marginalized group.

These findings were confirmed in a more recent study conducted by Pager (2007). For both whites and blacks, the effect of a criminal record was large and significant, with those possessing a criminal record less likely to be called back for an interview. Additionally, Pager examined the effect of different sanctions on employment prospects. She discovered that that among convicted and sentenced drug felons, employers were somewhat unlikely or very unlikely (39.2 percent) to hire person recently released from prison compared to those recently released from a court-ordered drug treatment program (26.8 percent). Pager argues that a prison sentence sends a message to potential employers that this person has a more serious problem and thus must be viewed with more caution. Consequently, the prison sentence is a "mark" on the individual that impedes offenders from obtaining gainful employment once released.
Extensions of Labeling Theory: Defiance and Shaming

Finally, within the labeling tradition, there have been more recent developments in explaining the impact of the criminal sanction on subsequent criminal behavior. Two of these more recent theories, Sherman's (1993) defiance theory and Braithwaite' (1989) reingtegrative shaming theory, have argued that contact with the criminal justice system does not inevitably lead to a solidification of criminal behavior (Braithwaite, 1989; Sherman, 1993). Instead, depending on the manner in which the sanction is delivered, the criminal sanction can have no effect, a criminogenic effect, or a deterrent effect. Thus, it is just not the presentation of a sanction that leads to a criminal response; rather, the quality of the sanction determines its subsequent effect on an individual.

Defiance theory contends that criminal sanctions can result in a variety of effects. Specifically, punishments can result in no effect on future criminal behavior, foster deterrence, or lead to defiance. When offenders have close ties to conventional others and see the sanction being imposed upon them as fair and deserved, the punishment will result in a deterrent effect. In this case, the offender accepts the sanction and views the sanctioning agent as legitimate and thus changes their behavior accordingly. However, defiance, or an increase in future offending, will result when the individual feels as though they have been treated unfairly and the sanction is unjust. When this occurs, the punishment is not seen as being legit, angering and upsetting the individual being sanctioned. As a result, the offender acts defiantly and engages in future criminal behavior as a way to rebel against the sanctioning agent.

Sherman further elaborated that defiance is most likely to result in defiance under three conditions. First, when the offender lacks social bonds with those in conventional society, they are likely to react defiantly because they are not restrained by informal social controls. Second,

when the sanction is seen as a personal attack and is particularly stigmatizing, the offender is likely to react with anger and thus with subsequent criminal behavior. Finally, when individuals reject the sanction and the associated stigma, they are likely to use criminal behavior as a way to exact revenge conventional society imposing the punishment.

Similarly, Braithwaite's reintegrative shaming theory also posits that the presentation of a sanction does not necessarily result in the hardening of a criminal trajectory. Instead, depending on how the sanction is applied, it can either increase or decrease subsequent criminal behavior. The central concept to this theory is shaming or the expression of disapproval. Braithwaite argues there are two distinct categories of shaming: reintegrative and disintegrative. When shaming is reintegrative, the offender is shamed and made aware of the extent of their wrongdoing, however the person is not outcast or ostracized by the community. Instead, efforts are made to reintegrate the offender back into the community. Thus, the offender is punished, but not stigmatized which results in a reduction in criminal behavior.

By contrast, the other type of shaming, disintegrative shaming, has a criminogenic effect. This type of shaming shows disapproval while isolating and alienating the offender from the community. The person is seen as a criminal and not worthy of being included in society. Thus, the shaming is stigmatizing and results in a criminal coping response where offenders often find refuge in criminal subcultures. This, in turn, further entrenches the offender in a criminal lifestyle.

How sanctions are currently practiced in U.S. are highly conducive to furthering criminal behavior through the mechanisms presented in labeling, defiance, and reintegrative shaming theories. As shown above, offenders face a stigma long after their court-imposed sanction is fulfilled. Offenders continue to be shunned and isolated through job discrimination, felon

disenfranchisement, and the fear and abandonment of family and friends. Consequently, the offender is not reintegrated into society; instead, they are alienated and ostracized from conventional society. This leads to feelings of anger and a need to rebel against the sanctioning agents as well as a tendency to associate with others in a similar situation. Thus, as predicted by labeling, defiance, and reintegrative shaming theory, it is expected that a prison sentence will result in a criminogenic effect on offenders' post-release behavior rather than a specific deterrent effect.

Prisons as Inappropriate Treatment

Although often ignored by criminologists assessing the effects of imprisonment, the work of Canadian psychologists such as Andrews, Bonta, and Gendreau on the principles of effective intervention also is relevant in explaining how prison can have a criminogenic effect on inmates (Cullen and Jonson, in press-b). Like Sherman and Braithwaite, these scholars contend that criminal sanctions will have varying effects depending on the quality of the sanction—that is, depending on what is actually done to offenders while under correctional control. They suggest that, even within prison settings, recidivism can be reduced if offenders are subjected to rehabilitation programs that conform and follow the "principles of effective intervention" (Andrews, 1989; Andrews and Bonta, 2010; Andrews, Bonta, and Hoge, 1990; Cullen and Jonson, in press-c; Gendreau, 1996; Gendreau, Smith, and French, 2006). These principles involve the targeting of those factors empirically found to be related to crime (also known as "criminogenic needs"), the use of treatment modalities that are responsive to the sources of reoffending (in particular, cognitive-behavioral programs), and focusing programs on high-risk offenders (Andrews, 1989; Andrews and Bonta, 2010; Andrews, Bonta, and Hoge, 1990).

Importantly, they also argue that criminal sanctions can be criminogenic under three circumstances (Andrews, 1995; Andrews, Zinger, Hoge, Bonta, Gendreau, and Cullen, 1990; Gendreau et al., 2000; Gendreau et al., 2006; Lipsey and Cullen, 2007; Smith, 2006, Smith, Gendreau, and Swartz, 2009). First, the sanction does not involve a rehabilitation component; second, the sanction involves an intervention that targets the wrong risk factors for change or uses the wrong treatment modality; and third, the sanction focuses on low-risk offenders who otherwise would have desisted from crime (Andrews, Zinger, et al., 1990; Cullen and Jonson, in press-b; Dowden and Andrews, 1999; 2000; Latessa, Cullen, and Gendreau, 2002; Lipsey and Cullen, 2007; Smith, 2006; Smith et al., 2009).

This perspective would thus suggest that imprisonment would be criminogenic, particularly for low-risk offenders (Smith, 2006). During their tenure in prison, many offenders receive no treatment or incorrect treatment (Andrews, Zinger, et al., 1990; Cullen and Jonson, in press-a, in press-b; in press-c; Latessa et al., 2002; Pearson, Lipton, and Cleland, 1996; Petersilia, 1992). Furthermore, as mass incarceration has spread as a social policy, it is possible that the prison population increasingly is housing lower-risk, nonviolent offenders (Abramsky, 2002; Center on Juvenile and Criminal Justice, 1999; Fellner, 2006). To the extent that this has occurred, it can be expected that prisons, with their focus on control rather than appropriate treatment, will likely be found to exert a criminogenic effect on the subsequent offending behavior of released inmates.

Summary

Overall, there are a variety of explanations for the criminogenic effect of imprisonment. These range from how the severing of social bonds due to a prison sentence free an individual to commit crime, to the impact that exposure to the strains and coercions characteristic of a prison

environment has on an individual, to how the hardships of living with the stigmatizing criminal label of ex-prisoner influences a person's self-identity and ability to participate in society, to the negative consequences of ineffective treatment provided in prison. Although there are a variety of explanations to why prisons may have an iatrogenic effect, all agree that prison is likely an imperfect solution to the crime problem; in fact, it potentially exacerbates the very problem it is attempting to control. Thus, unlike like those who view prison as having a deterrent effect, those who view prisons as a criminogenic experience make the opposite predictions concerning the impact of imprisonment on recidivism. Specifically, the criminogenic scholars would predict that custodial as opposed to non-custodial sanctions, longer versus shorter sentences, and prisons with harsher as compared to less harsh conditions would be associated with an increase in post-release criminal behavior.

RESEARCH STRATEGY

Although the United States embraces a policy of mass incarceration, specific knowledge about the effects of imprisonment on recidivism is not well developed. In other words, it cannot be stated with much confidence the exact effects that this reliance on imprisonment has on the post-release behavior of the millions of offenders who experience this sanction. This conundrum—the extensive use of prisons with minimal investigative efforts to determine the effects of imprisonment—has motivated the current project.

This is not to say, of course, that research on the effects of imprisonment does not exist. A number of studies have been conducted. Furthermore, as reviewed previously, important efforts have been undertaken to review these studies and to sort out what they tell us about the impact of custodial sanctions on future offending. For example, Nagin et al. (2009) provided the

most comprehensive review of studies on non-custodial versus custodial sanctions and length of incarceration; however, they conducted a ballot-box review and not a meta-analysis. Although Villettaz et al. (2006) conducted a meta-analysis, they did not examine the effect of time served nor the conditions of confinement on post-release criminal behavior. This dissertation also built on the Villettaz et al. study by examining more studies and multiple moderating variables (e.g., age, type of offender, methodological quality). Finally, Gendreau et al. (1999) and Smith et al. (2002) both conducted meta-analyses. However, this dissertation will expand upon these two prior reviews by analyzing a larger sample of studies and assessing the impact of additional moderating variables. Consequently, this dissertation was an attempt to add to these works that seek to determine more specifically whether a prison experience reduces, increases, or has no effect on recidivism.

More specifically, the goal was to advance the extant literature in three ways. First, this dissertation will provide the most comprehensive review of studies on the effects of prisons. Through a systematic review of the research, this project involved the analysis of 90 studies.

Second, this dissertation included three key independent variables that capture different potential impacts of imprisonment. These include: first, receiving a non-custodial versus a custodial sentence; second, the length of time served in prison; and third, the harshness of the prison conditions experienced during incarceration. These measures permitted this project to address three core research questions:

- 1. What is the effect of non-custodial versus custodial sanctions on recidivism?
- 2. What is the effect of sentence length on recidivism?
- 3. What is the effect of harshness of prison conditions on recidivism?

Third, to address these research questions, this dissertation used meta-analytic techniques to complete a quantitative synthesis of the existing empirical literature. For each research question, the goal was to determine the overall mean effect size of the independent variable in question (e.g., non-custodial versus custodial sanction; sentence length; harshness of conditions). In addition, a special contribution of this project was to systematically examine factors that might moderate the effect size of these independent variables. This moderating analysis is important to determine if the effects of imprisonment vary by a range of characteristics (e.g., type of offender; various demographic characteristics).

CONCLUSION

Overall, this study was an attempt to determine the impact that imprisonment has on the millions of offenders who are placed behind prison walls. As policymakers promote more get tough policies requiring the imprisonment of offenders for longer periods of time in harsher conditions, it is imperative to know what the consequences of this reliance on prison is having on the subsequent criminal behavior of inmates. Although many individual studies have been conducted on the effects of incarceration on subsequent recidivism, few attempts have been made to quantitatively synthesize this research. That is the goal of this dissertation.

In the chapters to come, the methodology of this study is explained, the results of the meta-analytic review are presented, and the theoretical and policy implications of the results are discussed. In the methodology section, the selection criteria, coding, and strengths and weaknesses of this analytical technique are considered. Next, in the results section, the analyses concerning the effects of non-custodial versus custodial sanctions, longer versus shorter sentences, and harsher versus less harsh prison conditions as well as the effect of various

moderating variables are provided. In this section, it is determined if prisons have no effect, a deterrent effect, or a criminogenic effect on the post-release criminal behavior of inmates. Finally, in the last chapter, both future research directions as well as the theoretical and policy implications of the findings are discussed.

Chapter II

METHODS

With over 2.4 million people incarcerated in the U.S. on any given day, it is imperative that the impact of imprisonment on future recidivism is well-understood. The purpose of this dissertation is to assess the effect of imprisonment of post-release criminal behavior of offenders. Although a large number of individual studies have been conducted assessing the relationship between imprisonment and recidivism, few systematic reviews of the research have been conducted. In fact, to date, only four projects have been undertaken to synthesize the research on the effect in imprisonment (Gendreau et al., 1999; Nagin et al., 2009; Smith et al., 2002; Villettaz et al., 2006). This dissertation is the fifth systematic review.

Unlike the other reviews, this dissertation focuses on three central empirical questions, with theoretical implications, that stand at the heart of the mass imprisonment movement: 1) When an offender is imprisoned as opposed to being given an alternative sanction (e.g., probation in the community), does this make the person less likely to reoffend? 2) Do longer sentences make offenders less likely to reoffend compared to shorter sentences? 3) Are harsher prison conditions associated with less recidivism than less harsh conditions? These questions are quantitatively assessed using meta-analytic techniques. Additionally, it is hoped that the current knowledge on imprisonment is advanced by reviewing a larger number of studies as well as assessing how the effect of imprisonment might vary by a range of characteristics (e.g., methodological rigor of the study, criminal and social background of the offender placed in prison).

In the pages to follow, the methodology utilized in this study is discussed. First, a description of meta-analyses is presented. In that discussion, both the strengths and weaknesses associated with using meta-analytic techniques are addressed. Second, the sample of studies, eligibility criteria, and how the studies were located are discussed. Third, the measurement of the dependent variable, recidivism, is explained. Fourth, the independent variables are presented. Fifth, the moderating variables included in the study are detailed. Finally, in the last section, the analytical techniques associated with meta-analysis are discussed. Included in this section will be a discussion on the computation of overall mean effect sizes, weighted mean effect sizes, the Q statistic, the binomial effect size display, and the fail-safe N estimation.

QUANTITATIVE SYNTHESIS OF RESEARCH STUDIES: CONDUCTING A META-ANALYSIS

In recent years, there has been a call to researchers to organize or take stock the vast amount of literature on a various topics of study, or has Hunt (1997, p.1) poignantly states to "make order of scientific chaos." Due to the immense amount of research on a particular topic, using different samples, methods, variables, and analyses, it is not uncommon that findings from various studies are often inconsistent (Wolf, 1986). Thus, scholars have attempted to organize or synthesize the large body of studies in order to make sense of the research. Traditionally, reviews have been conducted in two ways: 1) narrative reviews or 2) vote-counting (also known as ballot-box) reviews of the existing research (Hunter and Schmidt, 1990). However, both of these techniques have serious shortcomings that can impact the findings of the review (Hunt, 1997; Wolf, 1986).

Traditionally, the status of a particular topic in criminology has been established through a narrative review. In this type of synthesis, a reviewer gathers all the studies focusing on a

particular outcome, describes and categorizes them, and ultimately comes to a conclusion based on the careful reading of the research literature. Although this review can shed light on what the research has found, it has numerous flaws.

First, narrative reviews are often subjective (Pratt, 2002; Wolf, 1986). This type of review is vulnerable to the biases of researchers and their reading of the literature. This subject nature can result in two scholars reading the same literature on a particular topic and reaching different conclusions (Glass, 1976). Narrative reviews are, in essence, based on qualitative judgments of the reviewers. There are no set standards on how to conduct a narrative review, how to gather the studies, or how to organize the findings of a study. Consequently, when collecting the studies, researchers may inadvertently introduce bias when choosing which studies to include in the review and which studies to exclude. Not all scholars will agree on which studies to review, and even when the same studies are included, scholars will often have different interpretations of the findings. Due to the subjective nature of this type of review, it is often difficult for another scholar to replicate the findings.

A second flaw is that it becomes difficult to conduct a narrative review when the body of literature on a particular topic becomes too large (Hunter and Schmidt, 1990). In this case, it is a very daunting task to keep all the differences and variations between the studies straight. Thus, researchers often select a subset of studies in order to make their interpretations more manageable (Hunter and Schmidt, 1990; Shaffer, 2006). This, however, has two potential problems. First, the study is no longer a full review of all the research. Since studies are omitted, a complete review of the research on the topic in question is not provided. Second, the subset of studies selected is also subjected to the same selection biases of the research that the original larger sample of studies was subjected to as discussed above. Thus, the conclusions from

narrative reviews are unlikely to be replicated among other scholars due to both the subjective interpretation and selection of the studies included in the review.

The second common method for synthesizing a body of literature is the vote-counting or ballot box technique. Unlike a narrative review, this method divides studies into three categories: those that show positive effects on the outcome, those that show negative effects on the outcome, and those that show no effect (Hunt, 1997; Hunter and Schmidt, 1990). In essence, the researchers are tallying up the statistically significant results of various studies in order to determine the overall effect of certain predictors on a particular outcome variable. Thus, unlike the narrative review, there is some objective criterion when reading the studies to determine their effects, the significance of the findings. Once all the studies have been tallied up, the category with the most studies (positive, negative, or no effect) is determined to be what the overall effect is. However, just as with the narrative review, this technique is not without its flaws.

The major problem with the vote-counting method is that it weighs each study similarly. Consequently, no matter the sample size, each study carries the same weight when coming to a conclusion (Hunt, 1997; Hunter and Schmidt, 1990). For example, studies with an N of 20 would be given the same weight as studies with an N of 1,000. Although when examining individual studies, the findings of the study with 1,000 cases would be viewed with more confidence, this is not taken into account when synthesizing the research with a vote-counting method.

A second major flaw of the vote-counting technique is that it does not take into account the magnitude of effects across studies (Hunt, 1997). Thus, a study that shows a particularly strong relationship and a study that shows a very weak (albeit statistically significant) relationship will be given the same weight when tallying up the results. Thus, the vote-counting

method cannot tell scholars how strong the relationship is between variables; rather, it only can demonstrate whether or not a relationship is present.

Another problem with the vote-counting technique is that it is not statistically powerful (Hunt, 1997). Since the vote-counting method uses statistical significance as the criterion for determining whether or not a study has an effect, studies with small sample sizes will not produce many statistically significant findings. Even though a study may show that there may be a modest effect, it will not be significant due to the small sample size and thus will be tallied as a as showing no effect. The vote-counting method is thus pone to type II error, which occurs when researchers fail to detect a relationship when, in fact, there is a relationship present. Consequently, this leads to an underestimation of the true of effect of a predictor on a particular outcome (Hunt, 1997).

In response to the flaws associated with the narrative review and vote-counting techniques, scholars have begun utilizing meta-analysis as a way to synthesize or "make sense" of the current empirical research on a given topic. This way of reviewing the research is a relatively new idea coming about in the mid-1970s. Due the vast amount of literature being published on a given topic and the problems associated with the traditional reviews, Glass (1976), as the then-president of the American Educational Research Association, proposed this new way of organizing the existing empirical literature, which he termed meta-analysis (Glass, McGaw, and Smith, 1981; Hunt, 1997). According to Glass (1976, p. 3), "meta-analysis refers to the analysis of analyses…the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings." He contended that this involved a five-step process: 1) formulating the problem, 2) collecting the data, 3) evaluating the data, 4) synthesizing the data, and 5) presenting the findings (see, Hunt, 1997, p. 12; Cooper and Hedges,

1994). This new technique has been widely embraced among various scientific communities, with meta-analyses now being conducted in the criminal justice (Andrews, Zinger, et al., 1990; Dowden and Andrews, 1999, 2000; Gendreau et al., 1996; Hanson and Bussiere, 1998; Lipsey, 1992; Pearson and Lipton, 1999; Pratt et al., in press; Smith et al., 2009), medical (He, Vupputuri, Allen, Prerost, Hughes, and Whelton, 1999; Strazzullo, D'Elia, Kandala, and Cappuccio, 2009; Rhodes, Yu, Shanker, Deshpande, Varambally, Ghosh, Barrette, Pandey, and Chinnaiyan, 2004; Wilson and Giguere, 2008), agricultural (Alston, Chan-Kang, Marra, Pardey, and Wyatt, 2000; Armstrong, 1994; Bengtsson, Ahnstrom, and Weibull, 2005; Thiam, Bravo-Ureta, and Rivas, 2005), and the other behavioral sciences (Albarracin, Fishbein, Johnson, and Muellerleile, 2001; LeFrance, Hecht, and Paluck, 2003; McClure, 2000; Stanne, Johnson, and Johnson, 1999; Wolf, 1986). Not all scholars, however, have embraced this new technique. In fact, Hans Eysenck called this new way of reviewing the research as "an exercise in megasilliness" (Eysenck, 1978, p. 517). In light of both the praises and critiques of this technique, both the strengths and weaknesses of using a meta-analysis to organize the empirical literature will be discussed below.

Strengths of Meta-Analyses

As discussed above, the traditional manner in which the empirical literature has been reviewed is fraught with problems. However, the meta-analytic approach to synthesizing research overcomes many of the shortcomings of both narrative reviews and the vote-counting method. In fact, meta-analyses have five advantages over the traditional ways of synthesizing the research. Each of these will be discussed below.

Replication. First, meta-analyses are able to be replicated by other researchers (Durlak and Lipsey, 1991; Hunt, 1997; Lipsey and Wilson, 2001; Pratt, 2001, 2002). Such replication is

possible because the coding and categorization of studies are described in detail in the methodology sections of studies using meta-analytic techniques. Additionally, the coding sheets used to analyze the findings of each study are often published along with the meta-analysis or are available by request. As a result, they can be used by other scholars to replicate the findings. Unlike the narrative review where the categorization of studies and the decision-making criteria are based on subjective interpretations of the researcher, in a meta-analysis there are objective criteria used to code and analyze the studies being reviewed. Similarly, the eligibility criteria for the inclusion of studies and the manner in which the studies were collected are also transparent. Consequently, it is possible for other scholars to conduct an exact replication of the meta-analysis. Thus, for those who are skeptical of the findings of the meta-analysis, they can take it upon themselves to re-code the studies and come to their own conclusions.

Large Number of Studies Can Be Assessed. Second, as stated above, traditional narrative reviews often cannot assess a large number of studies (Hunt, 1997; Lipsey and Wilson, 2001). When using a narrative review to synthesize a large number of studies, it often becomes a formidable task to interpret and make sense of all the findings. Meta-analytic techniques, on the other hand, view each empirical study as a unique case in a large dataset (Hunt, 1997). Each of these unique studies is coded and various aspects of the study can be entered into a computer database and then analyzed with relative ease, just like any other dataset with a large number of cases. Thus, unlike the traditional narrative review of the research, meta-analytic techniques can be used to synthesize results across hundreds of studies, which results in a true synthesis of the existing empirical research (Lipsey and Wilson, 2001). Additionally, the use of computers allows researchers to add more studies to the database. Consequently, recent empirical literature can be included and the findings can be reassessed with relative ease (Pratt, 2001).

Magnitude of the Effect. A third advantage of using meta-analytic techniques is that the magnitude of relationships between variables can be assessed. Unlike a narrative review that just describes the studies or the vote-counting method that tallies up the significant effects reported in studies, meta-analytic techniques can produce a precise estimate of the effect between two variables (Hunt, 1997; Lipsey and Wilson, 2001; Pratt, 2001). When coding studies using meta-analytic techniques, the magnitude and direction of the relationships between variables are documented, not just the significance of the findings. Thus, meta-analyses take into account the strength of the relationships across various studies with differing sample sizes. Meta-analytic techniques also do not weight each study the same. Consequently, those studies with larger samples are given more weight, while those with smaller samples are given considerably less weight. As a result, a more precise estimate of the true relationship between variables can be assessed because the average effect size across all the studies is calculated (Hunt, 1997; Hunter and Schmidt, 1990).

Moderating Variables. Fourth, meta-analytic techniques allow for the examination between study findings and a variety of other characteristics. For example, the impact of demographic characteristics (e.g., age, sex, race), of study characteristics (e.g., year published, publication type), of methodological characteristics, (e.g., design of the study), and of measurement characteristics on the outcome variable can be also be assessed (Durlak and Lipsey, 1991; Lipsey and Wilson, 2001). In other words, it is possible to determine if the outcome varies by the type of respondent, unit of analysis, research design and if those differences are statistically significant (Lipsey and Wilson, 2001; Pratt, 2001).

Policy Implications. The final advantage of meta-analysis is the influence it can have on policy implications. Unlike the other types of reviews, the quantitative nature of the results

produced by a meta-analysis provide more concrete policy recommendations (Hunter and Schmidt, 1990; Shaffer, 2006). Instead of being armed with a qualitative synthesis of the research, policymakers have precise statistics and mean effect sizes concerning the impact of various policies. Thus, they can have more confidence in the findings of a meta-analytic overview as compared to a traditional narrative review or vote-counting study.

Weaknesses of Meta-Analyses

Although meta-analytic techniques have many potential advantages over the traditional ways in which the empirical research has been reviewed, it is not without its flaws. For example, there are issues concerning finding all the studies on a particular topic and the types of studies included in the analyses (Glass et al., 1981). Each of these critiques will be reviewed below.

Publication Bias. The first critique of meta-analysis is often referred to as the "file drawer" problem or publication bias (Lipsey and Wilson, 2001; Pratt, 2001, 2002; Rosenthal, 1979, 1984). This criticism contends that there a bias in the research that has been published, with only those studies showing statistically significant findings being accepted for publication and those not showing statistically significant findings being rejected (Glass et al., 1981; Hunt, 1997; Hunter and Schmidt, 1990; Rosenthal, 1979, 1984). Consequently, there are many other studies on a given topic that have been conducted showing null or non-significant findings that are "shoved into the file drawer" and are not included in meta-analyses when only examining published research. Critics argue that if these studies were included in the meta-analysis, the results could drastically change due to the biases of published studies to report significant findings (Logan and Gaes, 1993, Pratt, 2001, 2002).

Although this is a valid complaint of meta-analysis, it is also problematic for both the narrative review and vote-counting methods of synthesizing the research (Pratt, 2001, 2002).

However, there are two solutions to the problem. First, many scholars using meta-analytic techniques can attempt to gather both published and unpublished studies on a particular topic (Lipsey and Wilson, 2001). Researchers often contact well-known scholars in the area of expertise they are studying, search for state and governmental reports, gather theses and dissertations, and scour through titles of conference papers in order to secure unpublished studies. By securing both unpublished and published studies, it is hoped that this possible bias toward significant findings will be corrected.

The second manner to address the file drawer problem is to statistically test for such bias (Rosenthal, 1979), which can only be done when conducting a meta-analytic review as opposed to a narrative review or vote-counting study. Developed in 1979, Rosenthal created the *fail-safe N* statistic in order to determine the magnitude of the file drawer problem. This statistic, which was later modified by Orwin (1983) and Lipsey and Wilson (2001), determines the number of additional studies needed to reduce the findings of the meta-analysis to an alternative effect size, which is often close to 0 or no effect (Pratt, 2001, 2002; Lipsey and Wilson, 2001). The higher this number, the more likely that publication bias is not an issue in the meta-analysis because more studies would be needed to change the results. Consequently, when the fail-safe N is high, the findings of the meta-analysis can be viewed with more confidence and it can be concluded that mean effect size was not significantly biased (Hunter and Schmidt, 1990).

"Apples and Oranges." The second critique of using meta-analytic techniques is often referred to as the "apples and oranges" problem (Lipsey and Wilson, 2001; Pratt, 2001, 2002). This criticism claims that meta-analyses often combine different kinds of studies with different independent and dependent variables and then analyzes these studies as if they were the same. The critics argue that including all these various studies with differing samples and measures

results in a meaningless effect size (Hunter and Schmidt, 1990; Logan and Gaes, 1993). For example, in this dissertation, critics of meta-analysis would claim that mixing studies examining juveniles and adults, different measures of recidivism (e.g., rearrest, reconviction, reimprisonment for a new crime or technical violation), and varying follow-up lengths is inappropriate. The critics would claim that the diversity across these studies will yield an average effect size that really has no meaning due to the variations across the individual studies.

Along with the individual studies included in the meta-analysis having differing variables and sample sizes, critics contend that combining studies with various methodological characteristics is also misleading. Opponents of meta-analysis argue that including experimental, quasi-experiment, regression, and correlational studies in the meta-analysis is inappropriate. Logan and Gaes (1993, p. 247) poignantly state that meta-analysis is "an attempt to turn the lead of inadequate experiments into the gold of established knowledge." In other words, they are arguing that by using meta-analysis, researchers are attempting to combine studies of varying quality together to come to a definitive conclusion. Critics argue instead that studies of inferior methodology must be excluded from the analysis. These critics often use the term "garbage in, garbage out" to imply that including less methodologically sound studies in a meta-analysis produce misleading results (Slavin, 1986).

There are two ways to address the "apples and oranges" problem. First, researchers can only include those studies that have high methodological quality, such as experimental or quasiexperimental studies, and exclude those of inferior methodological quality. Although this is one solution, it does have one huge downfall. If only those studies with a quasi-experimental or experimental design were included in the meta-analysis, relative few studies would meet this eligibility criterion. Thus, a vast amount of the literature would be excluded resulting in the

synthesis of the research being based on very few individual evaluations (Lipsey and Wilson, 2001).

The second approach to addressing the "apples and oranges" problem is to statistically control for variation in the study characteristics and methodology in order to determine how they are related to the outcome (Lipsey and Wilson, 2001; Rosenthal, 1984). This technique will be employed in this dissertation. In this case, scholars code the differences across the studies and analyze them as they would any other variable. By doing this, researchers can determine if certain factors act as moderating variables on the outcome (Hunter and Schmidt, 1990). For example, it can be established if the average effect size is affected by the demographic characteristics of the studies, the measurement of the variables, and the methodological quality of the individual studies (Wolf, 1986). Therefore, many meta-analysis proponents would essentially argue that having multiple characteristics differing across the studies is not a problem that must be overcome when using meta-analytic techniques, but rather it is a strength because moderating variables can be identified (Hunter and Schmidt, 1990; Rosenthal, 1984).

Overall, meta-analysis is now a common technique to synthesize a large body of research. Although this method has many criticisms, each critique is able to be addressed and corrected in order to minimize its impact on the results. Additionally, meta-analytic techniques have many advantages over the traditional methods of synthesizing the research that lend it legitimacy among scholars as the preferred method of reviewing the empirical literature. Despite all its advantages, however, it is important to not sanctify meta-analysis as having the final word on any relationship. Rather, it remains one technique that scholars can utilize to assess relationships. This technique is often a prelude to show where there are gaps in the research and where future studies should be undertaken. Thus, meta-analysis is not a technique that is perfect

as it still has many shortcomings; however, it is a parsimonious way to organize and synthesize the existing research on a given topic. In light of these advantages and the ability to correct many of the criticisms, this dissertation employed meta-analytic techniques to assess the various impacts of incarceration on the post-release criminal behavior of offenders.

SAMPLE OF STUDIES

The first step in conducting a meta-analysis is the gathering of all relevant research literature on a current topic (see Hunt, 1977, p. 12; Cooper and Hedges, 1994; Lipsey and Wilson, 2001). In the current study, an attempt was made to collect any study conducted on the impact of non-custodial versus custodial sanctions, shorter versus longer prison sentences, and less harsh versus harsher prison conditions on post-release criminal behavior.

The relevant research was collected utilizing various techniques. First, the bibliographies of the four prior reviews of the research on imprisonment and reoffending were an invaluable starting point in collecting the studies (Gendreau et al., 1999; Nagin et al., 2009; Smith et al., 2002; Villettaz et al., 2006). Second, a keyword search was conduced in multiple databases: Criminal Justice Abstracts, Criminal Justice Periodical Index, Dissertation Abstracts Online, ERIC, National Criminal Justice Reference Service, PsycINFO, Social Sciences Index, Sociological Abstracts, and SocINDEX. Third, relevant journals were scoured issue by issue to locate any relevant studies. Fourth, a Google search was conducted to find other published and unpublished studies. This search resulted in the location of various state and national reports that were not found during the keyword search. Fifth, annual conference programs for the American Society of Criminology and the Academy of Criminal Justice Sciences were examined to discover unpublished research. Finally, the Department of Corrections and the Juvenile

Corrections agencies of every state in the United States were contacted in order to uncover and secure unpublished studies concerning the research questions. Of the 50 states, 10 states sent statistics about their correctional populations, 11 states responded stating they had no information concerning this topic, and no response was received from the other 29 states.

To be included in the meta-analyses, the studies must have been deemed eligible. The inclusion criteria are as follows: 1) The study must have compared samples of respondents given non-custodial versus custodial sanctions, *or* samples receiving shorter versus longer custodial sanctions, *or* samples serving prison time in less harsh versus harsher conditions; 2) the study must have measured post-release criminal behavior; and 3) the study must have provided enough information to calculate an effect size. Additionally, all studies must have been received and coded by June 21, 2010. The inclusion criteria were intentionally made relatively lax to include a larger number of evaluations. By including a large number of studies, multiple moderators are able to be coded (e.g., methodological rigor, follow-up periods, sample demographics). Consequently, this is an advantage of utilizing meta-analytic techniques to review the research because the impact of various variables on the outcome can be assessed.

Overall, 301 separate studies were collected with 85 deemed eligible for inclusion in the meta-analysis. Of these 85 studies, 57 assessed the impact of non-custodial versus custodial sanctions. Twenty-seven studies investigated the relationship between sentence length and recidivism¹. Finally, only eleven studies were found to examine the effects of the harshness of prison conditions and subsequent post-release criminal behavior, with all of these studies examining the differences of recidivism of those released from higher security prisons compared to lower security prisons.

¹ The number of studies does not add to 85 because some studies assess the impact of non-custodial and custodial sanctions, sentence length, and/or conditions of confinement.

DEPENDENT VARIABLE

The dependent variable concerning all three research questions is recidivism or postrelease criminal behavior. Much of the research has distinguished between prevalence and the incidence of recidivism. Prevalence refers to whether or not a person recidivates within a given period of time. In essence, this is a dichotomous, yes/no type of measure. Consequently, a person who recidivates one time after release from prison and a person who recidivates eight times after release will both be counted the same using a prevalence measure; both individuals will be coded as a "yes" in whether or not they recidivated.

On the other hand, incidence counts the specific number of times a person recidivates. Using the example from above, the person who recidivates one time will be coded as a one, while a person who recidivated eight times will be coded as an eight. Thus, this measure then can assess exactly how many times a person recidivates rather than just whether or not they recidivated in a given follow-up period.

Because how recidivism will be measured and the follow-up periods will vary across the studies, numerous measures were used to assess the dependent variable. For example, each study's minimum, maximum and mean follow-up periods were coded. Additionally, exactly how recidivism was measured was coded with the following categories: arrest/charged by police, contact with the court, reconviction, reinstitutionalization/reimprisonment for a new crime, reinstitutionalization/reimprisonment for a technical violation, or a combination of all of the above. Again, for each of these measures, it was also noted if this was a prevalence measure (using a dichotomous, tricotomous, or four or more discrete categorical variable) or an incidence measure (using a count measure). Furthermore, the type of offense included in the recidivism measure was coded in the following manner: all offenses, drug offenses, sexual offenses, violent

offenses, property offenses, traffic offenses, and other offenses. Also, the source of the data for the recidivism measure was also recorded by indicating whether the measure was an official or self-report measure. The recidivism means and standard deviations for each group were also documented (See Appendix A for the coding guide). Finally, in studies that reported multiple measures of recidivism, the most serious form of recidivism was used to calculate an effect size. For example, if rearrest, reconviction, and reimprisonment were all reported in a single study, the effect size was calculated using the data from the reimprisonment measure.

INDEPENDENT VARIABLES AND RESEARCH QUESTIONS

As stated in the Research Strategy section above, three core research questions are addressed in this dissertation:

- 1. What is the effect of non-custodial versus custodial sanctions on recidivism?
- 2. What is the effect of sentence length on recidivism?
- 3. What is the effect of harshness of prison conditions on recidivism?

These three questions thus served as the three independent variables utilized in this study.

The first independent variable included in this study is type of sanction, which is measured by whether the punishment is a non-custodial or custodial sanction. For this independent variable, it was coded whether or not the sanction involved placement in a staffsecure institution or whether they were placed in the community. Examples of staff-secure institutions include jails, prisons, boot camps, and secured half-way houses. This stands in stark contrast to the non-custodial sanctions imposed on offenders. These non-custodial sanctions can include probation, intensive supervision probation, electronic monitoring, and the imposition of fines or restitution. In essence, this variable is determining whether or not the offender can

freely move about in the community or if they are locked behind secured walls. Along with coding the type of non-custodial and custodial sanction, the mean length (in months) individuals served for each type of sanction was also documented. Additionally, the number of individuals placed in each type sanction was recorded.

The second independent variable analyzed in this dissertation is the impact of sentence length for a custodial sanction on recidivism. Specifically, this was measured using the number of months an individual served in a custodial sanction. Those who serve less time will be compared to those who serve longer periods of time in order to determine the impact of sentence length on recidivism. When multiple measures of sentence length were given (e.g., 12 months, 18 months, 24 months), it was attempted to compare individuals given the shortest sentence to those given the longest sentence. However, often the number of individuals given the longest sentence was too few in number to support a solid comparison. In these instances, sentences of greater than 60 months (five years) were combined and compared to inmates serving the shortest sentence reported. Additionally, the number of individuals serving both shorter and longer sentences was also recorded.

The final independent variable coded in this meta-analysis is the harshness of the prison sanction. As stated above, a search for relevant literature conducted on this topic uncovered relatively few studies. A crude measure of conditions of confinement was thus used as a way to analyze this research question. Specifically, conditions of confinement was coded by custody level of the institution.

Overall, this dissertation sought to answer three main research questions concerning the effect of imprisonment on recidivism. These three questions provide the three independent variables in this study: non-custodial versus custodial sanctions, sentence length, and conditions

of confinement (See Appendix A for the coding guide). Although these three variables will be the main focus of the study, other variables were assessed in order to determine their impact on the outcome. These variables are discussed below.

MODERATING VARIABLES

As stated above, one of the advantages of using meta-analytic techniques is that a number of variables can be included as moderating variables. This allows researchers to determine how the outcome is influenced by a variety of factors, including study characteristics, sample demographics, and methodological quality. This dissertation sought to examine six categories of moderating variables (See Appendix A for the coding guide). Each of these categories and the variables included within each are discussed below.

Study Characteristics

Multiple characteristics of the study were coded in this meta-analysis. First, the authors' affiliation (university, state agency, federal agency, mixed, or other) was coded. Additionally, the authors' discipline was recorded (criminal justice/criminology, psychology, sociology, social work, mixed, or other). The publication year and decade published, the year and decade the data was gathered, the publication type (book, book chapter, federal report, state/local report, conference paper, journal, thesis/dissertation, and other), and the location of the study (USA, Canada, England, Australia, New Zealand, other, and missing) were also documented. Further, whether or not the researcher was involved in the study or was an outside reviewer as well as the name and type of the funding agency (unfunded, state agency, federal agency, and other) for the study were also coded.

Sample Demographics

Not only were study characteristics recorded, but also various attributes of the sample were documented. A large amount of prior research has shown demographic variables to be related to recidivism (Beck and Shipley, 1989; Cannon and Wilson, 2005; Councell, 2003; Gendreau et al., 1996; Langan and Levin, 2002; Sabol et al., 2000). Consequently the impact of these variables must be assessed. First, the age of the sample (exclusively adults, exclusively juveniles, mainly adults–greater than 80 percent of the sample, mainly juveniles–greater than 80 percent of the sample (adults provide) as well as the mean age in each group were coded.

Second, as shown above, recidivism rates do seem to vary by sex and race of the offender (Beck and Shipley, 1989; Langan and Levin, 2002). Consequently, the sex of the sample (exclusively male, exclusively female, mainly males – greater than 80 percent of the sample, mainly females – greater 80 percent of the sample, and mixed group) as well as the percent of males in each group were recorded. Race was also documented with the percent black, white, Hispanic, and other coded for the whole sample and in each group.

Another demographic variable that is found to be related to recidivism is offense type (Beck and Shipley, 1989; Langan and Levin, 2002; Sabol et al., 2000). Therefore, the current offense type was also recorded. Specifically, the percent of drug offenders, sexual offenders, violent offenders, property offenders, DUI offenders, domestic violence offenders, and other offenders were coded for the entire sample and each group.

Criminal History

One of the most consistent predictors of recidivism is past criminal behavior (Beck and Shipley, 1989; Langan and Levin, 2002; Sabol et al., 2000). Therefore, it was imperative to code for this variable in the meta-analysis. Multiple aspects of criminal history were coded.

Specifically, mean age at first detention, percent of the whole sample and each group who had a prior record, mean number of prior offenses for each group and the entire sample, the percent of the whole sample and each group with a prior incarceration, mean number of prior incarcerations for the whole sample and each group, and percent of the whole sample and each group with prior drug, sexual, violent, property, DUI, domestic violence, and other offenses were recorded.

Other Criminogenic Needs

Other variables that have been found to be associated to recidivism were also coded in this meta-analysis. These variables include substance abuse, mental health, and presence of a treatment during the sanction. Specifically, substance abuse was coded as the percent of the whole sample and of each group with a substance abuse problem. Mental health was similarly measured as the percent of the whole sample and in each group with a mental health problem. Finally, the presence of treatment, length of treatment, and type of treatment were documented. In particular, the presence of treatment was coded as whether or not the non-custodial and custodial sanction was coupled with any treatment. Then, the length of treatment in months was recorded. Finally, the type of treatment (cognitive-behavioral, group, individual, mixed, and unknown) was documented.

Additionally, the risk-level of the offenders were assessed as much research has shown that intervening with low-risk offenders produces an iatrogenic effect (Andrews, Zinger, et al., 1990; Cullen and Jonson, in press-b; Dowden and Andrews, 1999; 2000; Latessa, Cullen, and Gendreau, 2002; Lipsey and Cullen, 2007; Smith, 2006; Smith et al., 2009). Consequently, risk was assessed in four ways. First, the risk-level of the offenders was recorded (low, moderate, high, or cannot tell). Second, the percent of offenders scoring as high-, moderate-, and low-risk for the whole sample as well as for each group was documented. Third, the measurement of risk

was also coded (use of a valid psychometric, use of recidivism percent, use of demographic information – less than two priors – author defined, use of demographic information – less than two priors – coder defined, and cannot tell). Finally, the name of the risk instrument used was also noted.

Social Bonds

Variables that measure the bond of the individuals to conventional society were also coded. This is important as age-graded social bond theory (Sampson and Laub, 1993), defiance theory (Sherman, 1993), and reintegrative shaming theory (Braithwaite, 1989) all contend that individuals more bonded to conventional society will be less likely to recidivate. Social bonds were assessed by examining the marital status, education, and employment of the sample. For all three of these variables, the percent for both the whole sample and the percent in each group who were married, who had earned a high school diploma or GED, and who were unemployed were noted.

Methodological Quality

As stated above, an advantage of meta-analysis is that the methodological quality of a study can be coded and its impact on the outcome can be assessed (Hunter and Schmidt, 1990). This dissertation will assess methodological quality in numerous ways. First, a rating of initial group similarity was recorded on a scale one to four (1 = nonrandomized design with a comparison group highly likely to be different, 2 = nonrandomized design with acknowledged differences between the groups, 3 = nonrandomized design with strong evidence of initial equivalence, 4 = randomized design with a large N or small N or matching). Further, the variables that were matched were also recorded (age; gender; marital status; education;

employment; economic status; ethnic background; current conviction offense – drug, sexual, violent, property, DUI, domestic violence, and other offense; criminal history – age at first detention, prior record, drug related charges; seriousness of offense, substance abuse, and mental health). Similarly, it was coded whether or not these same variables listed above were statistically controlled for and how they were measured (dichotomous/dummy, continuous).

Additionally, whether the groups being compared were control or comparison groups was coded. Control groups involved those studies that used an experimental design or the group being compared to the custodial sanction receiving no other sanction. On the other hand, comparison groups received some kind of sanction. For example, a comparison group study would compare those who received a prison sentence to those who received a probation sentence. On the contrary, a control group study would have either randomly assigned individuals to the non-custodial and custodial sanction or those placed in a custodial sanction would be compared to individuals who received no sanction whatsoever.

The final methodological variable coded is attrition. The criterion for attrition is no more than 20 percent of each group could drop out of the study. Consequently, at least 80 percent of each group must complete the entire sanction. This construct is measured as a dichotomy (yes, no).

ANALYSIS

In order to answer the above three research questions, a series of analyses were conducted. First, univariate statistics were calculated for the multiple studies included in the meta-analysis. Second, effect sizes were computed between the independent variables and the recidivism measures for each study followed by the calculation of a mean effect size.

Additionally, the binomial effect size display was computed. Fourth, the fail-safe N was calculated in order to determine how many studies are needed to reduce the findings to an alternative effect size of 0.001. Finally, the impact of the moderators was assessed by comparing the confidence intervals of each category of the moderating variables to see if there were any statistically significant differences. These techniques are described in detail below.

Effect Size Estimates

The advantage of using meta-analytic techniques to synthesize the research is that it takes various studies and transforms them into a common statistic, the effect size, which allows researchers to determine the effect of numerous predictors on an outcome (Bonta, Law, and Hanson, 1998). This dissertation utilized the standardized correlation coefficient r as the effect size estimate. Although other estimates are available, such as the logged odds ratio and mean difference, the correlation coefficient was chosen for a variety of reasons (Hedges and Olkin, 1985; Lipsey and Wilson, 2001). First, r is easily interpretable (Rosenthal, 1994). Second, multiple formulas are available to convert other test statistics, such as t, F, and chi-square into an r value with relative ease (Bonta et al., 1998; Lipsey and Wilson, 2001; Rosenthal, 1984). Since r is not normally distributed, each value must be converted to a z(r) score. This transformation results in a sampling distribution that approaches normality. This conversion was done using Fisher's r to z transformation (Wolf, 1986).

Each effect size was weighted by sample size. As argued above, a disadvantage of narrative and vote-counting reviews of the research is that all studies in the synthesis are weighted similarly. The advantage of using meta-analytic techniques is that studies with larger samples can be weighted more heavily and given more emphasis than those with smaller samples (Hunt, 1997; Hunter and Schmidt, 1990). This is due to larger samples producing more reliable

results due to the smaller amount of sampling error present than compared to studies with smaller sample sizes. As a result, this dissertation weighted each study by sample size using the formula suggested by Rosenthal (1984). This is calculated by taking the product of z(r) and inverse of its variance, which is calculated as the sample size minus three, from each study.

After each effect size has been converted and weighted, a weighted mean effect size was calculated. The mean effect size combines the results of all the studies by taking an average of all the effect sizes from the individual studies (Hunt, 1997). It is calculated by taking the sum of each individual weighted effect size and dividing it by the sum of the inverse of the variance for each weighted effect size (Lipsey and Wilson, 2001). Finally, a 95 percent confidence interval around the mean effect size was computed (Lipsey and Wilson, 2001). If this confidence interval included the value of zero, the results were deemed nonsignificant. However, if zero did not fall within the 95 percent confidence interval, the findings were considered significant at the .05 level.

One issue that is the subject of some controversy among meta-analysts is the use of beta weights or standardized regression coefficients in the calculation of effect sizes (Becker and Wu, 2007; Pratt, 1998; Pratt et al., in press). Opponents of using beta weights when calculating effect sizes argue there two main problems associated with this practice. The first problem concerns the lack of equivalence in the measures used to assess the independent and dependent variables (Becker and Wu, 2007). It is argued that if the variables are not measured in the same manner, the beta weights should not be combined because the estimates depend on the scale of the variables included in the model.

Second, opponents of using beta weights contend that for these to produce an accurate estimate, all the same independent variables must be included in and controlled for in every

study used in the meta-analysis (Becker and Wu, 2007). The regression coefficients are sensitive to the variables controlled for in each study. Consequently, if each study does not include the same independent variables, the estimates could be biased. Thus, creating an effect size from these coefficients could result in a biased effect size. Since it is virtually impossible that every study included in a meta-analysis will measure similarly as well as include all the same variables in their models, scholars argue that the use of standardized coefficients to calculate effect sizes should be avoided.

Although there is opposition to the use of beta weights in the computation of effect sizes, other scholars argue that these coefficients can be used, and, in fact, may have some advantages to the use of zero-order correlations. For example, Pratt et al. (in press) defend the use of beta weights when determining effect sizes. They argue that standardized regression coefficients are able to produce more accurate estimates because they take into account the impact of various control variables on the estimate. This is in contrast to the use of zero-order correlation coefficients where no controls are included in the estimate. Proponents of utilizing beta weights argue that the use of zero-order correlation coefficients in the computation of effect sizes will lead to inflated estimates. Thus, proponents argue that the use of beta weights is the preferred measure used to estimate effect sizes.

Despite the fact that there is some support for the use of beta weights in the computation of effect sizes, the arguments for not utilizing beta weights to calculate effect sizes appear to be more sound. Due to the sensitivity of beta weights to measurement issues and the need for exactly the same variables to be included in every regression model, this dissertation did not compute effect sizes using the beta weight estimate. Instead, effect sizes were only calculated based on the reported bivariate statistics in each study examined.

Additionally, the Q statistic was computed for each of the three main questions to determine the presence of outliers (Rosenthal, 1991). This statistic, which determines the homogeneity of the effect sizes, was computed for each individual effect size using the formula:

$$Q_{ES} = \frac{(k-3)}{\left(z_r - z^+\right)^2}$$

where k is the number of effect sizes per measure, z_r is the transformed Pearson correlation coefficient, and z^+ is the weighted mean effect size per measure. Once this was calculated for each effect size, all the Q_{ES} values were summed resulting in Q_{OBT} and compared with a critical value of χ^2 with k–1 degrees of freedom. If this value was significant, the distribution was considered heterogeneous and outliers were identified using two criteria. First, any value that was greater than three standard deviations from the mean were removed (Bonta et al., 1998). Second, estimates that were discontinuous in the distribution (e.g., where there were large gaps between subsequent values in the distribution) were also eliminated (Durlak and Lipsey, 1991). After all the values that met these two criteria were deleted, the mean effect size, the weighted mean effect size, and their respective confidence intervals were recalculated. The results are reported both with and without the outliers included.

Binomial Effect Size Display

In order to help facilitate the interpretation of the results, the binomial effect size display (BESD) was also computed (Randolph and Edmondson, 2005; Lipsey and Wilson, 2001; Rosenthal and Rubin, 1983). The use of the BESD has two main advantages. First, it is easily interpretable, and second, it is easily computed (Randolph and Edmondson, 2005). This statistic represents the difference between control and experimental groups on a particular outcome. In

this dissertation, the BESD revealed the differences in recidivism for each of the independent variables (type of sanction, sentence length, and conditions of confinement).

To compute the BESD, the mean effect size is converted back to r. Once this conversion is done, r is divided by two. This is then added to .50 to get the upper percentage, and then subtracted from .50 to obtain the lower percentage. For example, if r = -.10 favoring noncustodial sentences, the BESD would show that 45 percent (.50 + -.10/2) of those with noncustodial sentences recidivated while 55 percent (.50 - -.10/2) of those with custodial sentences recidivated. Therefore, this statistic would show that there are 10 percentage points separating those with non-custodial versus custodial sentences (Lipsey and Wilson, 2001; Randolph and Edmondson, 2005). Due to its interpretability, ease of calculation, and the dichotomous nature of the three main independent variables in this dissertation, the BESD associated with each mean effect size was computed.

Fail-Safe N Statistic

As previously discussed, one of the main disadvantages in any systematic review is the failure to retrieve all relevant research on a given topic. In particular, securing unpublished studies is difficult. This is problematic because there is not a central database or search engine of unpublished research. This failure to secure unpublished research can influence the results of the meta-analysis because published research has been shown to have a tendency to favor significant results (Glass et al., 1981). Those studies that show nonsignificant or null results often are rejected and thus "shoved in a file drawer." However, unlike the other types of reviews of the research, meta-analytic reviews have the ability to assess this problem utilizing the fail-safe N statistic (Rosenthal, 1979; Wolf, 1986). The fail-safe N determines the number of studies that need to be included to reduce the effect size to an alternative effect size (for this dissertation, this

value is 0.001). The larger this number, the more confident researchers can be in their findings; the smaller this number, the more caution needed when interpreting the results (Hunter and Schmidt, 1990; Lipsey and Wilson, 2001; Pratt, 2001, 2002).

Although Rosenthal (1979) was the first to develop a formula for the fail-safe N, Orwin (1983) modified it to:

$$N_{fs} = \frac{N_o(\overline{d}_o - \overline{d}_c)}{d_c - \overline{d}_f s}$$

In this formula N_o is the number of studies, d_o is the mean effect size calculated from all the evaluations coded in the study, d_c is the desired effect size, and d_{fs} is the mean effect size of the additional studies. This formula computes N_{fs} , which is the number of additional studies needed to obtain the desired effect size (d_c).

The formula created by Orwin is based on Cohen's $d_{,}$ thus is not useful for meta-analyses that report the correlation coefficient. However, Lipsey and Wilson (2001) adapted this formula to be used with other metrics. This formula is:

$$k_o = k \left[\frac{\overline{\mathrm{ES}}_{\mathbf{k}}}{\overline{\mathrm{ES}}_{\mathrm{c}}} - 1 \right]$$

where k_o corresponds to the number of studies needed to reduce the mean effect size for the meta-analysis to the alternative or criterion effect size level ($\overline{ES_c}$), k is the number of studies used to calculate the weighted mean effect size, $\overline{ES_k}$ is the weighted mean effect size, and $\overline{ES_c}$ is the criterion effect size level (Lipsey and Wilson, 2001). For this dissertation, the criterion effect size level was set to 0.001, as Hedges and Olkin (1985) suggest that the criterion should be set to a value that is considered negligible (Shaffer, 2006).
Moderating Variables

Although the main purpose of this dissertation was to examine the impact of noncustodial versus custodial sanctions, sentence length, and harshness of prison conditions on the subsequent criminal behavior of offenders, the impact of various moderating variables were also examined. Specifically, as stated above, the influence of various study characteristics, sample demographics, criminal history, other criminogenic needs, social bonds, and methodological characteristics on recidivism were explored. This was done by calculating mean effect sizes and their respective confidence intervals for each category of the moderating variable. If the confidence interval for a particular category of a moderating variable does not overlap when the confidence interval of another category of that moderating variable, it can be assumed that there is a significant moderating effect. However, as will be seen in Chapter III, many moderating variables were unable to be assessed as the amount of missing data was too substantial for a sound analysis.

CONCLUSION

Although the use meta-analytic techniques to review the research has some shortcomings, its strengths and the ability to address many of the problems through statistical methods make it a more desirable way to synthesize the existing empirical literature. In this dissertation, many of the weaknesses associated with meta-analysis have been addressed. First, efforts have been made to secure both published and unpublished studies. Additionally, the fail-safe N statistic was calculated for each mean effect size for the three independent variables in order to determine the possible magnitude of the "file drawer" problem. Second, many moderating variables were coded in order to attempt to control for the effects of the various study, sample, and

methodological characteristics of the studies included in the analysis addressing the "apples and oranges" criticism.

Overall, this dissertation sought to accomplish two goals. First, the effects of sentence type, sentence length, and the conditions of confinement on post-release offending were determined. Second, the impact of various moderators were assessed to discover if these main effects vary by the characteristics of the individuals receiving the sanction (e.g., age, sex), the attributes of the study (e.g., publication decade, author discipline, author affiliation), and the methodological quality of the studies included in the analysis. By reviewing more studies and moderating variables than the previous reviews of the research, it is hoped that this study has contributed to a better understanding of the effects of imprisonment on recidivism

CHAPTER III

RESULTS

This dissertation sought to answer three main research questions: 1) What is the effect of non-custodial sanctions as opposed to custodial sanctions on subsequent recidivism?, 2) What impact does sentence length have on the reoffending behavior of released inmates?, and 3) Are harsher conditions as opposed to less harsh prison conditions associated with a greater reduction in recidivism? The literature search discovered 301 studies that examined at a minimum one of the three main research questions. Of these 301 evaluations, 85 (28.2 percent) were deemed eligible for inclusion into the analysis. Out of these 85 studies, 57 (67.1 percent) assessed the impact of non-custodial versus custodial sanctions, producing 177 effect sizes. Twenty-seven evaluations (31.8 percent), from which 50 effect sizes were calculated, examined the impact of shorter versus longer sentences on reoffending behavior. Finally, 11 studies (12.9 percent), providing 15 effect sizes, analyzed the relationship between the conditions of confinement and post-release criminal behavior. Because each of the research questions addressed a distinct component of the prison experience, the results below are presented separately for each question.

However, before the results for each of the three independent variables are presented, it is imperative that it is explained how to read the mean effect sizes and weighted mean effect sizes that are presented in the tables. When the estimate is shown to have a negative effect, this corresponds to the non-custodial sanction, the shorter sentence, or the less harsh condition being associated with a greater decrease in recidivism than the custodial sanction, the longer sentence, or the harsher condition of confinement. In other words, a negative effect size indicates a

criminogenic effect of custodial sanctions, longer sentences, and harsher conditions. On the other hand, when the estimate indicates a positive effect, this denotes a deterrent effect of the custodial sanction, the longer sentence, or the harsher condition. Thus, negative effects contradict the specific deterrence argument, while positive effects are supportive of the specific deterrence perspective.

NON-CUSTODIAL VERSUS CUSTODIAL SANCTIONS

Publication Characteristics

As can be seen in Table 3.1, 177 effect sizes assessed the impact of receiving a noncustodial versus a custodial sanction on future criminal behavior. The majority of these effect sizes (49.2 percent) were calculated from studies published in the current decade. Another onethird (31.1 percent) were derived from reports published in the 1990s, with the remaining 19.8 percent of the estimates generated from research released between 1960 and 1989.

Concerning the type of publication, the majority of estimates (36.7 percent) were extracted from journal articles. This was followed by research published as a book (27.1 percent), a state/local report (20.9 percent), or federal report (12.4 percent). The remaining 2. 8 percent of effect sizes were computed from book chapters, theses/dissertations, or other sources.

When examining the affiliation of the authors who conducted the study, roughly 60 percent of the effects sizes were generated from studies conducted by those associated with a university (20.3 percent), a state agency (19.8 percent), or a federal agency (18.1 percent). Approximately 14 percent of the estimates where extracted from studies with an author affiliation falling in either the mixed (6.2 percent) or other (7.3 percent) categories. Finally, for 28.2 percent of effect sizes the author affiliation was not reported.

Publication Characteristic	k	%
Publication Decade		
1960	6	3.4
1970	14	7.9
1980	15	8.5
1990	55	31.1
2000	87	49.2
Publication Type		
Book	48	27.1
Book Chapter	2	1.1
Federal Report	22	12.4
State/Local Report	37	20.9
Journal	65	36.7
Thesis/Dissertation	2	1.1
Other	1	0.6
Author Affiliation		
University	36	20.3
State Agency	35	19.8
Federal Agency	32	18.1
Mixed	11	6.2
Other	13	7.3
Missing	50	28.2
Type of Funding Agent		
Unfunded	45	25.4
Agency Funded	15	8.5
State Funded	27	15.3
Federally Funded	38	21.5
Other	3	1.7
Missing	49	27.7
Involvement of Evaluator		
Yes	21	11.9
No	107	60.5
Missing	49	22.6

Table 3.1. Descriptive Statistics: Publication Characteristics for Non-custodial versus Custodial Comparisons

Table 3.1. Continued

Publication Characteristic	k	%
Geographic Location		
USA	91	51.4
Canada	5	2.8
England	17	9.6
Australia	10	5.6
Other	54	30.5

Roughly one quarter of the effect sizes were calculated from unfunded evaluations. In contrast, over 36 percent of the estimates were computed from studies funded by state or federal agencies. Another 8.5 percent of effect sizes originated from reports that were funded by an outside agency, while 1.7 percent had other funding. The largest number (27.7 percent) of effect sizes came from reports where the funding agent could not be determined.

Concerning the involvement of the evaluator in the study, a full 60 percent of the effect sizes were calculated from reports where the author had no involvement in the evaluation. In other words, the author was an independent evaluator of the question being addressed. On the other hand, approximately 12 percent of the estimates were calculated from studies where the author was involved in the evaluation. Finally, this information was missing for 22.6 percent of the effect sizes calculated.

The final publication characteristic coded was the geographic location of the study. As shown in Table 3.1, more than half (51.4 percent) of the effect sizes were calculated from studies conducted in the United States. Another 18 percent were derived from studies conducted in Canada (2.8 percent), England (9.6 percent), and Australia (5.6 percent). Finally, almost one-third (30.5 percent) of the estimates were extracted from evaluations conducted in other countries, such as Norway and the Netherlands.

Sample Characteristics

As shown in Table 3.2, multiple characteristics of the sample were also coded. In particular, the age, sex, type of offender, and risk-level of the sample was recorded. The majority (52 percent) of the effect sizes were drawn from samples that only included adult offenders. Additionally, another 19.8 percent of estimates came from samples that were mainly

Sample Characteristic	k	%
Age of Offenders		
Exclusively Adults	92	52.0
Exclusively Juveniles	20	11.3
Mainly Adults (over 80%)	35	19.8
Mixed	13	8.1
Missing	17	9.6
Sex		
Exclusively Males	57	32.2
Exclusively Females	0	0.0
Mainly Males (over 80%)	82	46.3
Mixed	15	8.5
Missing	23	13.0
Mean Percent Males for Sample	106	92.4
Type of Offender in Study		
All	160	90.4
Drug	0	0.0
Sexual	4	2.3
DUI	3	1.7
Other	10	5.6
Risk		
Low	15	8.5
Moderate	3	1.7
High	7	4.0
Mixed	37	20.9
Missing	115	65.0

 Table 3.2. Descriptive Statistics: Sample Characteristics for Non-custodial versus Custodial

 Comparisons

adults (over 80 percent adults). Only 11.3 percent were calculated from samples that included only juvenile offenders, while 8.1 percent were derived from samples with a mix of adult and juvenile offenders. Finally, this information was missing for a full 9.6 percent of effect sizes.

The majority of effect sizes were calculated from samples that were either exclusively males or mainly males (32.2 percent and 46.3 percent, respectively). In fact, the mean percent males for the 177 effect sizes was 92.4 percent. No estimates were extracted from an exclusively female sample and only 8.5 percent were drawn from a mixed sample. Consequently, it is not possible to generalize the findings from this analysis to female offenders. Finally, this information was unavailable for 13.0 percent of the estimates.

The vast majority of estimates (90.4 percent) are derived from samples with all types of offenders combined together. Only 2.3 percent and 1.7 percent are extracted from samples consisting of exclusively sex or DUI offenders, respectively. Finally, this information was missing for 5.6 percent of the effect sizes.

The final sample characteristic coded was the risk-level of the sample. This is an important variable as much research has shown that interventions with low-risk individuals can produce iatrogenic effects. Although this is a key factor to examine, as shown in Table 3.2, the risk-level of offenders was not reported for 65 percent of the estimates. An additional 14.2 percent of the effect sizes were derived from low-risk (8.5 percent), moderate-risk (1.7 percent), or high-risk (4 percent) samples. Finally, 20.9 percent of the effect sizes were extracted from samples that included all three risk-levels.

Study Characteristics

Table 3.3 presents five study characteristics for the 177 effect sizes assessing the impact of non-custodial and custodial sanctions on recidivism. First, the type of non-custodial sanction was coded. The majority (40.7 percent) of the effect sizes compared a sentence to straight probation with a custodial sanction. The second most common non-custodial sanction was a sentence to probation with special conditions, such as a requirement to attend a treatment facility, a day reporting center, or restitution (27.1 percent). For roughly 10 percent of the effect sizes community service (6.2 percent) or electronic monitoring/house arrest (4 percent) was compared to custodial sanctions. Approximately, nine percent of the estimates were derived from studies where the non-custodial sanction could be classified as general non-custodial, which meant the study reported only that the sanction was not a secure residential facility. An additional 10.2 percent of estimates came from studies where the sanction fell into the other category. This included sanctions such as fines, restitution, nonresidential treatment, and day reporting centers. Finally, this information was missing for 3.2 percent of the estimates.

Along with the type of non-custodial sanction received, information was also collected on type of custodial sanction being compared in the analysis. The majority of effect sizes (48.6 percent) were extracted from studies comparing prison to a non-custodial sanction. This was followed by shock probation, consisting of 18.1 percent of the effect sizes. Next, 7.9 percent of the estimates compared general custodial sanctions, or those studies that stated that the sanction was in a secure residential facility, to a non-custodial sanction. This was followed by the comparison of juvenile detention centers (6.8 percent), boot camps (6.2 percent), residential programs (5.6 percent), work release (3.4 percent), and jail (2.8 percent) to non-custodial sentences. Lastly, this information was not reported in 0.6 percent of the cases.

Study Characteristic	k	%
Type of Non-custodial Sanction		
Probation	72	40.7
Probation with Conditions	48	27.1
General Non-custodial	15	8.5
Community Service	11	6.2
Electronic Monitoring/House		
Arrest	7	4.0
Other	18	10.2
Missing	6	3.4
Type of Custodial Sanction		
Prison	86	48.6
Jail	5	2.8
Juvenile Detention	12	6.8
Boot Camp	11	6.2
Shock Probation	32	18.1
Generic Custodial	14	7.9
Residential Programs	10	5.6
Work Release	6	3.4
Missing	1	0.6
Methodological Ouality		
Randomized or Matching Design	17	8.5
Nonrandomized Design with		
Strong Evidence of Initial		
Equivalence	20	11.3
Nonrandomized Design with	122	68.9
Acknowledged Differences		
Between Groups		
Nonrandomized Design with	15	8.5
Major Differences Between		
Groups		
Missing	3	1.7

 Table 3.3. Descriptive Statistics: Study Characteristics for Non-custodial versus Custodial Comparisons

Table 3.3. Continued

Study Characteristic	k	%
Recidivism Measure		
Arrest/Charged by Police	27	15.3
Conviction	49	27.7
Reimprisonment	92	52.0
Parole/Technical Violation	2	1.1
Other	7	4.0
Length of Follow-Up Period		
0-12 Months	38	21.5
13-24 Months	58	33.3
25 + Months	78	44.1
Missing	3	1.7

The methodological rigor of the study was also assessed. Seventeen of the 177 effect sizes (8.5 percent) were derived from studies with strong methodological designs that included randomized or matching sampling techniques. Another 11.3 percent were calculated from studies with a nonrandomized design that showed strong evidence of initial equivalence. The majority of estimates (68.9 percent) were extracted from studies utilizing a nonrandomized design with acknowledged differences between the comparison groups. Roughly nine percent of the effect sizes are generated from studies with a very weak methodological design that utilized nonrandomized designs with major difference between the two groups being compared. Finally, the methodological quality could not be assessed for 1.7 percent of the estimates.

The last two study characteristics deal with the measurement of the dependent variable, recidivism. First, how recidivism was measured is coded. Second, the length of the follow-up period was documented. Concerning the measurement of recidivism, 52 percent of the effect sizes were extracted from studies measuring recidivism as reimprisonment. This is followed by reconviction (27.7 percent), rearrest (15.3 percent), other measures (4 percent), and parole or technical violations (1.1 percent). When examining the length of follow-up, the majority of estimates (44.1 percent) are derived from studies with 25 or more month follow-up periods. One-third of the effect sizes were calculated from evaluations that tracked inmates for 13 to 24 months, and 21.5 percent were computed from reports with 0 to 12 month follow-up periods. The length of the follow-up period was missing for 1.7 percent of the effect sizes.

Effect Sizes

Table 3.4 reports the mean effect size, the weighted mean effect sizes, and the respective 95 percent confidence intervals including and excluding outliers for the relationship between non-custodial and custodial sanctions, shorter versus longer sentences, and harsher and less harsh

Model	k	Ν	r	sd	95% CI	\mathbf{Z}^{+}	95% CI
Non-custodial versus Custodial	177	1,154,038	11	.17	14 to09	1440	1458 to1422
With outliers removed	115	148,737	07	.16	10 to04	0534	0585 to0483
Shorter Length versus Longer Length	50	138,685	02	.13	05 to .02	.0495	.0442 to .0548
With outliers removed	41	45,588	01	.12	05 to .03	.0302	.0210 to .0394
Less Harsh versus Harsher Conditions	15	204,926	16	.10	22 to11	1535	1578 to1492
With outliers removed	10	10,113	17	.10	25 to10	1330	1525 to1135

Table 3.4. Mean Effect Sizes

Note: The Q statistic was significant for all three independent variables. Results are reported both with outliers included and with outliers removed.

conditions and recidivism. As shown in the first line, 177 effect sizes assessing the relationship between non-custodial and custodial sanctions and recidivism from 1,154,038 non-unique offenders generated a mean effect size of -.11 (sd = .17) and a weighted mean effect size of -.1440. For both of these estimates, the 95 percent confidence intervals do not include zero which corresponds a statistically significant, negative relationship between the type of sanction received and recidivism.

Thus, custodial sanctions are associated with an increase in post-release reoffending, while non-custodial sanctions result in a decrease in recidivism. This finding contradicts the assumptions of specific deterrence theory. To be more exact, when calculating the BESD, individuals receiving custodial sanctions have a recidivism rate of 55.5 compared to 44.5 percent for those experiencing non-custodial sanctions. This was calculated by taking the mean effect size (*r*), dividing it by two, then adding it to .50 and subtracting it from .50 ($.50 \pm -.11/2 = 44.5$ and 55.5, respectively).

As stated in Chapter II, the Q statistic was calculated to identify effect sizes that could be considered outliers. For the non-custodial versus custodial comparison, the Q statistic was statistically significant. Thus, outliers that were greater than three standard deviations from the mean and those that were discontinuous on the distribution were eliminated. This resulted in the removal of 62 effect sizes. As can be seen in the second line of Table 3.4, after the removal of the outliers, the mean effect size and the weighted mean effect size were both deflated (r = -.07, sd = .16; $z^+ = -.0534$). However, both the mean effect size and weighted mean effect size were still negative and statistically significant showing a decrease in recidivism for those sentenced to non-custodial sanctions, thus failing to support the specific deterrent argument.

Fail-Safe N

As stated in Chapter II, one of the main critiques of meta-analysis involves publication bias. Since the majority of studies that are included in these analyses are published in a journal, book, or book chapter, the fail-safe N was calculated to determine the number of studies needed to reduce the effect size to 0.001. Using Lipsey and Wilson's (2001) formula, an additional 8,151 studies with an effect size of 0 would be needed to reduce the effect size to .001. Thus, the findings can be viewed with much confidence.

The fail-safe N was also calculated for the weighted mean effect size after the removal of outliers. In order to reduce this effect size to 0.001, an additional 2,558 studies would have to be included. Again, since this is such a high number, these findings can be viewed with much confidence.

Moderating Variables

Although multiple moderating effects were able to be assessed in this dissertation, the goal of being able to assess multiple categories of moderating variables was not achieved. In particular, this study could not analyze some sample demographics, criminal history, substance abuse or mental health, and social bond variables as the data did not support these analyses. This is due to the high amount of missing data. In other words, many of these variables were not reported in the primary studies that were included in the analyses, thus the impact of these variables on the outcome, recidivism, could not be assessed. For example, for the measures of marital status, educational level, employment status, prior record, substance abuse, mental health, and even race, more than 50 percent of the effect sizes had missing data for these variables. The variables with enough valid cases to be included in the moderating analyses are listed in Tables 3.5, 3.6, and 3.7.

To determine if a variable had a significant moderating effect, the following was done. Within each variable, the confidence interval of each category was compared to one another to determine whether the intervals overlapped with one another. If the intervals did overlap, then it was determined there was no moderating effect as the values were not significantly different from one another. However, if the confidence intervals did not overlap, it was determined there was a 95 percent likelihood that there was a significant moderating effect as the effect sizes could be deemed statistically different from one another (Cummings and Finch, 2005). For example, in Table 3.5, to determine if publication decade had a significant moderating effect, the confidence intervals surrounding the effect size for each of the decades (e.g., 1960, 1970, 1980, 1990, and 2000) were compared with one another to determine if any of the intervals did not overlap with one another (Cumming and Finch, 2005). As can be seen, there was no overlap in three instances: 1) between 1970 and 2000, 2) between 1980 and 2000, and 3) between 1990 and 2000, which indicates a significant moderating effect. In all three cases, the effect size for studies conducted in 2000 (r = -.19) is significantly greater than those from 1970 (r = .00), 1980 (r = -.05), and 1990 (r = -.03). Although it is beyond the scope of this study to determine why this significant effect is found, one plausible explanation is that the research has become more sound and sophisticated and better able detect true effects. Thus, this could possibly explain why studies conducted later have larger effect sizes when compared to studies conducted in earlier decades.

Additionally, the preciseness of the estimates can also be determined by examining the confidence intervals. As reported in Gendreau and Smith (2007), an interval greater than .10 is considered wide (see also, Snook, Eastwood, Gendreau, Goggin, and Cullen, 2007). When intervals are greater than .10 in width, the point estimate (e.g., the mean effect size) can be

considered imprecise. However, when the interval is .10 or less the estimate can be considered precise. As seen in Table 3.5, when examining publication decade, the only intervals within the .10 cut-off is that for 1990 and 2000. Thus, these two mean effect sizes can be viewed as more precise than those for the other decades.

A second moderating effect was found for publication type, with the confidence intervals surrounding the mean effect size from books (r = -.28) not overlapping with those from federal reports (r = -.04), state reports (r = -.05), and journal articles (r = -.05). Books provided the largest mean effect size, followed by journal and state reports, and then federal reports. Again, although beyond the scope of this study, one possible explanation is that in order for findings to be published in a book format, significant findings must be found. It is highly unlikely an entire book would be published around findings that were not found to be significant. However, nonsignificant findings are more likely to be presented in state and federal reports and possibly journal articles. Thus, this may explain the significant difference in effect sizes among publication type. Additionally, it should be noted, that with the exception of books, there were no statistically significant differences in mean effect sizes for reports that were published (e.g., journals) and those that were unpublished (e.g., federal reports, state/local reports, thesis/dissertations). Also, interestingly, all effect sizes for publication type can be considered precise estimates of the true parameter because in no instance is the confidence interval greater than .10 (Gendreau and Smith, 2007; Snook et al., 2007).

A third moderating effect was found for the location of the study. The confidence intervals for the USA (r = -.04) and other categories (r = -.27) did not overlap. Similarly, there was no overlap between England (r = .01) and the other category (r = -.27), USA (r = -.04) and Australia (r = -.17), and England (r = .01) and Australia (r = -.17), indicating a significant

Publication Characteristic	k	Ν	r	sd	95% CI
Publication Decade					
1960	6	15,657	13	.15	29 to .02
1970	14	1,157	.00	.17	10 to .10
1980	15	7,295	05	.11	11 to .02
1990	55	153,563	03	.14	07 to .01
2000	87	976,366	19	.16	22 to16
Publication Type					
Book	48	365,734	28	.11	31 to25
Book Chapter	2	1,972	18	.15	
Federal Report	22	84,545	04	.18	12 to .04
State/Local Report	37	556,687	05	.14	10 to00
Journal	65	140,349	05	.14	08 to01
Thesis/Dissertation	2	3,729	.02	.02	
Other	1	1,022	11		
Author Affiliation					
University	36	18,909	02	.14	07 to .03
State Agency	35	647,255	08	.13	12 to03
Federal Agency	32	86,134	07	.17	13 to01
Mixed	11	26,567	03	.12	11 to .05
Other	13	7,943	00	.10	06 to .06
Missing	50	367,230	27	.12	31 to24
Type of Funding Agent					
Unfunded	45	49.218	05	.12	09 to02
Agency Funded	15	11,222	.02	.10	03 to .08
State Funded	27	630,930	07	.14	13 to02
Federally Funded	38	94,898	04	.16	10 to .01
Other	3	806	12	.24	71 to .48
Missing	49	366,964	28	.11	31 to25
Involvement of Evaluator					
Yes	21	548.900	07	.15	07 to .002
No	107	238,174	04	.14	07 to02
Missing	49	366,964	28	.11	31 to25

Table 3.5. Mean Effect Sizes: Publication Characteristics for Non-custodial versus Custodial Comparisons

Table 3.5. Continued

Publication Characteristic	k	Ν	r	sd	95% CI
Geographic Location					
UŠA	91	700,097	04	.14	07 to01
Canada	5	1,185	09	.14	27 to .09
England	17	37,994	.01	.15	07 to .09
Australia	10	2,688	17	.10	24 to10
Other	54	412,074	27	.12	30 to23

moderating effect of location of the study. In each instance, the other category or Australia showed a larger mean effect size than those found for studies conducted in the USA or England. Thus, evaluations of sanctions in Australia or other countries (e.g., the Netherlands) show a weaker deterrent effect of custodial sanctions than those conducted in the U.S. or England.

Additionally, as seen in Table 3.5, the preciseness of these estimates can also be assessed. By examining the width of the confidence intervals, the estimates for the USA and other countries can be deemed precise using the cut-off of .10. However, the mean effect sizes for Canada, England, and Australia should be viewed as less exact because the confidence interval exceeds the .10 value. In fact, for Canada, the width of the interval is .36, over three times that .10 cut-off.

Examining Table 3.6, it can be seen that there are three sample characteristics with significant moderating effects: age, sex, and type of offender. First, for age, the confidence intervals do not overlap between the exclusively adult (r = -.18) and mainly adult (r = -.03) and the exclusively adult (r = -.18) and mixed categories (r = -.01). In both cases, the effect size is larger for those studies with exclusively adult samples. Additionally, only the exclusively adult category has a confidence interval less than .10 in width, suggesting that it is a precise estimate of the true parameter. Thus, in studies with only adults included in the sample, the mean effect size was significantly larger than studies that included juveniles. Although not able to be assessed directly in this study, this may suggest that custodial sanctions are particularly harmful for adult offenders.

The second sample characteristic with a moderating effect is the sex of the offender. The confidence intervals for exclusively males (r = -.04) and mainly males (r = -.21) and mainly males (r = -.21) and mixed sex (r = -.02) samples did not overlap suggesting a significant

Sample Characteristic	k	Ν	r	sd	95% CI
Age of Offenders					
Exclusively Adults	92	731.661	18	.17	21 to14
Exclusively Juveniles	20	28,343	08	.14	15 to02
Mainly Adults (over 80%)	35	289,811	03	.15	08 to .03
Mixed	13	7.621	01	.11	07 to .06
Missing	17	96,602	04	.10	09 to .01
Sex					
Exclusively Males	57	32,820	- 04	15	- 08 to 002
Exclusively Females	0				
Mainly Males (over 80%)	82	629,933	- 21	14	- 24 to - 18
Mixed	15	395.510	02	.16	11 to .07
Missing	23	95,775	00	.11	05 to .04
Mean Percent Males for Samp	le 106				
Type of Offender in Sample					
All	160	1,065,966	12	.17	15 to09
Drug	0				
Sexual	4	866	12	.11	29 to .05
DUI	3	81,430	.00	.02	05 to .06
Other	10	5,776	00	.09	07 to .07
Risk					
Low	15	88,436	06	.10	12 to01
Moderate	3	1,348	06	.15	43 to .31
High	7	3,400	.05	.16	09 to .20
Mixed	37	563,542	10	.15	15 to05
Missing	115	497,312	13	.18	16 to10

Table 3.6. Mean Effect Sizes: Sample Characteristics for Non-custodial versus Custodial Comparisons

moderating effect of sex. In both cases, the mean effect size from studies with mainly male samples was significantly greater than those for exclusively male or mixed sex samples. When examining how precise the estimates are, only the mean effect sizes for exclusively males and mainly males fall within the .10 interval suggested by Snook et al. (2007). The interval for mixed samples can be considered more imprecise as its interval is .18, or almost twice the .10 cut-off.

The final sample characteristic found to have a significant moderating effect is the type of offender in the sample. The confidence intervals surrounding the mean effect size for all offenders (r = -.12) and DUI offenders (r = .00) and all offenders (r = -.12) and other offenders (r = -.00) do not overlap. In both cases, the mean effect size is significantly larger for samples that combine all offenders than for samples that separate out distinct types of offenders. In fact, the mean effect sizes for both DUI offenders and other offenders are .00, suggesting that there may not be differences in recidivism for those receiving non-custodial versus custodial sanctions for these two types of offenders. Additionally, the effect sizes for DUI offenders and other offenders should not viewed as precise because the intervals are greater than .10; however, the mean effect size for all offenders can be deemed precise because the interval is within the .10 cut-off suggested by Snook et al. (2007).

Finally, as seen in Table 3.7, four study characteristics are shown to have significant moderating effects: type of non-custodial sanction, type of custodial sanction, recidivism measure, and length of follow-up. For non-custodial sanctions, there are five instances where the confidence intervals surrounding the mean effect sizes do not overlap: 1) probation (r = -.10) versus probation with conditions (r = -.22), 2) probation (r = -.22) versus electronic monitoring/house arrest (r = .10), 3) probation with conditions (r = -.22) versus electronic

Study Characteristic	k	Ν	r	sd	95% CI
Type of Non-custodial Sanction					
Probation	72	710.277	10	.15	14 to07
Probation with Conditions	48	264.641	22	.15	26 to18
General Non-custodial	15	133,705	08	.18	18 to .02
Community Service	11	13,809	01	.14	11 to .09
Electronic Monitoring/House		,			
Arrest	7	2,776	.10	.10	.01 to .20
Other	18	22,230	02	.12	08 to .04
Missing	6	6,600	08	.10	18 to .03
Type of Custodial Sonation					
Prison	86	070 024	12	15	15 to 00
Init	5	970,924 82 254	12	.15	15 to 09
Juvenile Detention	12	7 664	08	.11	21 to $.00$
Boot Camp	12	7,004	09	.17	20 to .01
Shock Probation	32	62 311	.00	.10	12 to .12
Generic Custodial	52 14	02,311	24	.10	30 to 17
Residential Programs	14	20 001	00	.09	07 to .11
Work Polooso	10	20,991	00	.09	13 to .002
WOIK Release	0	2,143	.00	.08	02 to .14
Missing	1	1,077	23		
Methodological Quality					
Randomized or Matching Design	17	5,705	05	.10	10 to .004
Nonrandomized Design with Strong Evidence of Initial					
Equivalence	20	23,727	05	.10	10 to .03
Nonrandomized Design with	122	983,177	13	.18	16 to09
Acknowledged Differences					
Between Groups					
Nonrandomized Design with Major Differences Between	15	139,905	14	.12	20 to07
Groups					
Missing	3	1,524	19	.01	22 to15

Table 3.7. Mean Effect Sizes: Study Characteristics for Non-custodial versus Custodial Comparisons

Table 3.7. Continued

Study Characteristic	k	Ν	r	sd	95% CI
Recidivism Measure					
Arrest/Charged by Police	27	18,238	.02	.12	03 to .07
Conviction	49	193,440	04	.14	08 to .00
Reimprisonment	92	925,865	19	.16	22 to15
Parole/Technical Violation	2	15,375	07	.01	
Other	7	1,120	12	.14	25 to .01
Length of Follow-Up Period					
0-12 Months	38	81,201	04	.17	10 to .01
13-24 Months	58	288,723	11	.17	16 to07
25 + Months	78	779,273	15	.16	18 to11
Missing	3	4,841	.07	.08	13 to .28

monitoring/house arrest (r = .10), 4) probation with conditions (r = -.22) compared to community service (r = -.01), and 5) probation with conditions (r = -.22) versus other non-custodial sanctions (r = -.02). In each of these cases, the mean effect size for probation with conditions, which can include requirements to attend outpatient treatment, report to a day reporting center, and/or pay a fine or restitution, is larger than the remaining non-custodial sanctions. The next largest negative mean effect size is found for probation. These findings suggest that probation with conditions may be associated with the largest reduction in recidivism, while sentences to straight probation, community service and other non-custodial sanctions are associated with less significant reductions. One reason for this finding may be that a sentence to probation with conditions often required the individual to attend some type of treatment program, while the other non-custodial sanctions did not make this a condition of the sentence. Thus, it is possible that there may be a treatment effect that is being captured in the probation with conditions sanction that is resulting in the greater reduction of recidivism. Interesting, the findings also indicate that sentences to electronic monitoring/house arrest are associated with increases in post-release offending.

When determining whether these estimates are precise, only the mean effect sizes associated with probation and probation with conditions have intervals that do not exceed .10. Every other type of non-custodial sanction has confidence intervals that exceed .10 in width. Thus, these estimates should be viewed as less precise than the estimates reported for probation and probation with conditions.

Second, there are significant moderating effects found for type of custodial sanctions. In fact, there are seven instances where the confidence intervals do not overlap: 1) prison (r = -.12) and shock probation (r = -.24), 2) prison (r = -.12) compared to generic custodial sanctions (r = -.12)

.06), 3) prison (r = -.12) versus work release programs (r = .06), 4) shock probation (r = -.24) and boot camps (r = .00), 5) shock probation (r = -.24) and generic custodial sanctions (r = -.06), 6) shock probation (r = -.24) compared to residential programs (r = -.06), and 7) shock probation (r = -.24) versus work release (r = .06). Shock probation is shown to have a more criminogenic effect than any other custodial sanction. This is then followed by a prison sentence. Thus, in studies where a non-custodial sanction is compared to either shock probation or prison, larger mean effect sizes are produced, suggesting these two sanctions have a particularly strong iatrogenic effect on offenders' post-release criminal behavior. Further, when comparing studies that have prison as the custodial sanction to those with shock probation, the shock probation studies show a stronger criminogenic effect.

Although not able to be assessed in this study, there are three possible explanations for why sentences to prison and shock probation (which often can include up to a six month stay in prison followed by a term of probation) may result in a greater criminogenic effect than other custodial sanctions. First, these two types of sentences may carry greater stigmas than other types of custodial sanctions, such as residential programs or boot camps. The ex-con label is traditionally applied to those who served time in a prison institution. Often times the other custodial sanctions are not located in "hard-core," high-security institutions, thus the people receiving these sanctions are not viewed by the public as serious and violent criminals. Additionally, these two sanctions may have a greater damaging effects on a person's social bonds, particularly employment, because these sanctions make it impossible to work in the community unlike some residential programs and work release programs. Similarly, more treatment may be provided in other types of custodial sanctions, such as in residential programs and work release programs, than available within prison or with shock probation sanctions.

However, it must be kept in mind that only the mean effect size for prison can be viewed as a precise estimate using the .10 cut-off. Every other custodial sanction has a confidence interval around its mean effect size that exceeds .10.

A third significant moderating effect was found for the measurement of recidivism. The confidence intervals for the recidivism measure did not overlap when comparing arrest (r = .02) and reimprisonment (r = .19) and conviction (r = .04) and reimprisonment (r = .19). In both of these cases, studies using reimprisonment as the measure of recidivism have a stronger, negative mean effect size, suggesting a greater criminogenic effect of custodial sanctions. One possible explanation for these findings is that reimprisonment captures more serious types of reoffending than either rearrest or reconviction. To be reimprisoned, an individual must be both rearrested and reconvicted. Thus, reimprisonment is a more conservative measure of recidivism capturing more severe types of reoffending. Because only the most serious recidivists are captured by the reimprisonment measure, it may then be possible that a greater effect would be seen between non-custodial and custodial sanctions for this measure than for the other two less severe measures of recidivism. Further, in all three cases, the width of the confidence intervals for the mean effect sizes is within the .10 cut-off suggesting that that all three mean effect sizes are precise estimates of the true parameters (Gendreau and Smith, 2007; Snook et al., 2007).

The final significant moderating effect is the length of time the offenders were tracked. As seen in Table 3.7, there is a significant moderating effect in one instance: 0 to 12 months (r = -.04) compared to 25 or more months (r = -.15). Studies with longer follow-up periods are associated with a greater mean effect size than those with shorter tracking periods. One explanation for this finding could be that in studies with longer follow-up periods offenders are given a longer time to fail once released. Thus, offenders have more time to be labeled as

recidivists during longer follow-up periods, suggesting a higher recidivism rates when compared to studies with shorter tracking periods (Maltz, 1984). Consequently, studies with longer followup periods may produce larger mean effect sizes because more individuals are recidivating within that longer time frame as compared to a shorter time frame.

The fact that significant moderating effects were not found for risk-level and methodological quality is of some importance. Research evaluating the effects of imprisonment is often subject to the criticism that those receiving custodial sanctions recidivate more than those in the non-custodial group because they are, to begin with, more criminal. In essence, the claim is made that a "compositional effect," not an "imprisonment effect," accounts for higher rates of reoffending among those in the custodial group. In this regard, the findings on risk-level and methodological quality have implications for assessing this dissertation's finding that custodial sanctions are associated with higher levels of reoffending.

Thus, as seen in Table 3.6, in the studies where risk-level was reported, the mean effect size was negative and was the same magnitude for low-risk and moderate-risk samples (-.06 and -.06, respectively). In other words, even when both groups were categorized as low-risk or moderate-risk, custodial sanctions were associated with an increase in recidivism, while non-custodial sanctions corresponded to a decrease in recidivism. However, only the mean effect size for the low-risk sample was significant at the .05 level.

On the other hand, a positive mean effect size was found for high-risk samples, suggesting a slight deterrent effect of custodial sanctions. When both the non-custodial sanction and custodial sanction groups included high-risk offenders, a decrease in recidivism was found for custodial sanctions as opposed to non-custodial sanctions. However, this mean effect size is not statistically significant as zero falls within its confidence interval. Further, this was

computed from seven individual effect sizes, and is thus an unstable estimate. Consequently, this finding must be viewed with much caution. Additionally, because a significant moderating effect was not found for risk-level, the mean effect sizes for the low-, moderate-, and high-risk groups are not significantly different from one another because all three of their respective confidence intervals overlap with each other. Thus, the argument that the findings were influenced by differences between the non-custodial and custodial groups appear to be unfounded.

The second manner in which to determine if the composition of the non-custodial and custodial groups impacted the results is to examine methodological quality. Again, no significant moderating effects were found for the methodological quality of the study. Nonetheless, as can be seen in Table 3.7, the effect sizes for the studies that employed a stronger methodological design (e.g., those where there are few or no differences between the noncustodial and custodial groups) are weaker than those with weaker methodological designs (e.g., those where it is likely that there are significant differences between the non-custodial and custodial groups). However, although the magnitude of the mean effect size is decreased, the direction still remains negative, suggesting that custodial sanctions still have a slight criminogenic effect on reoffending. Consequently, the fact that the results were not significantly moderated by risk-level or methodological quality provide added confidence that the findings are not due to compositional differences between those offenders sentenced to non-custodial versus custodial sanctions. Instead, the findings appear to reflect a slight criminogenic influence of imprisonment due to the nature of the sanction rather than the composition of the comparison groups.

Finally, it must be stated that when Tables 3.5, 3.6, and 3.7 are examined, there are instances when the confidence intervals of certain variables do not overlap with the missing category. Although this is indicative of a significant moderating effect, these cases were not elaborated upon above as this is not likely to be of substantial theoretical relevance. Given that the number of effect sizes (k) in the missing category were often quite large, this may be contributing to the significant differences that were found for these variables (author affiliation, type of funding, involvement of the evaluator, age, sex, risk-level, and methodological quality). Consequently, only those variables that had significant differences between categories other than the missing categories were presented.

SENTENCE LENGTH

Publication Characteristics

Just as reported for the comparisons of non-custodial and custodial sanctions, multiple publication characteristics were documented for the effect sizes comparing shorter sentences to longer sentences. As can be seen in Table 3.8, one half of the 50 effect size estimates were generated from studies conducted in the last decade. Another seven percent were generated from evaluations from the 1990s. An additional 12 percent were derived from research published in the 1980s, and finally 34 percent were extracted from reports that were printed in the 1970s.

Concerning the type of publication, 42 percent of the estimates were generated from journal articles. This was followed by state/local reports (34 percent), federal reports (12 percent), and books (8.0 percent). Finally, four percent of the effects sizes were extracted from studies published as a book chapter (2 percent) or in a thesis/dissertation (2 percent).

Publication Characteristic	k	%
Publication Decade		
1960	0	0.0
1970	17	34.0
1980	6	12.0
1990	2	7.0
2000	25	50.0
Publication Type		
Book	4	8.0
Book Chapter	1	2.0
Federal Report	6	12.0
State/Local Report	17	34.0
Journal	21	42.0
Thesis/Dissertation	1	2.0
Other	0	0.0
Author Affiliation		
University	14	28.0
State Agency	18	36.0
Federal Agency	8	16.0
Mixed	4	8.0
Other	0	0.0
Missing	6	12.0
Type of Funding Agent		
Unfunded	23	46.0
Agency Funded	1	2.0
State Funded	14	28.0
Federally Funded	7	14.0
Other	0	0.0
Missing	5	10.0
Involvement of Evaluator		
Yes	20	40.0
No	24	48.0
Missing	6	12.0

Table 3.8. Descriptive Statistics: Publication Characteristics for Shorter versus Longer Lengths of Incarceration

Table 3.8. Continued

Publication Characteristic	k	%
Geographic Location		
USA	40	80.0
Canada	0	0.0
UK	0	0.0
Australia	6	12.0
Other	4	8.0

The majority of the effect sizes were generated from studies where the author's affiliation was a state agency (36 percent). A university affiliation was seen for 28 percent of the estimates, while affiliation with a federal agency was recorded for 16 percent. Eight percent of the effect sizes were generated from studies with a mixed author affiliation. Finally, this information was missing for 12 percent of the estimates.

Forty-six percent of the effect sizes were calculated from studies that were not funded. State (28 percent) and federal (14 percent) agency funding was reported for 42 percent of the estimates. Another two percent were funded by outside agencies. Lastly, 10 percent of the estimates did not have information about the funding of the research recorded.

The involvement of the evaluator was pretty evenly split between the 50 effect sizes calculated. For 40 percent of the estimates, the evaluator was involved, while for 48 percent there was no involvement of the evaluator. The remaining 12 percent did not have this information reported.

Finally, the geographic location of the study was documented. A full 80 percent of the effect sizes were drawn from samples in the United States. An additional 12 percent were computed from evaluations conducted in Australia. The final eight percent were derived from studies conducted in other countries, such as the Netherlands.

Sample Characteristics

Along with multiple publication characteristics, various sample characteristics were also coded. As seen in Table 3.9, 38 percent of the effect sizes are drawn from samples that are exclusively adults. Another 22 percent are generated from studies that are mainly adults. Only 12 percent are calculated from samples including only juveniles, and two percent are computed

Sample Characteristic	k	%
Age of Offenders		
Exclusively Adults	18	38.0
Exclusively Juveniles	6	12.0
Mainly Adults (over 80%)	11	22.0
Mixed	1	2.0
Missing	13	26.0
Sex		
Exclusively Males	23	46.0
Exclusively Females	2	4.0
Mainly Males (over 80%)	18	36.0
Mixed	5	10.0
Missing	2	4.0
Mean Percent Males for Sample	41	88.5
Type of Offender in Study		
All	38	76.0
Drug	2	4.0
Sexual	5	10.0
DUI	0	0.0
Other	5	10.0
Risk		
Low	4	8.0
Moderate	0	0.0
High	0	0.0
Mixed	11	22.0
Missing	35	70.0

Table 3.9. Descriptive Statistics: Sample Characteristics for Shorter versus Longer Lengths of Incarceration

from a mixed sample. Remarkably, this information was missing for 26 percent of the effect sizes.

The majority of estimates (82 percent) came from studies that were either exclusively (46 percent) or mainly males (36 percent). Only two effect sizes (4 percent) were calculated from an exclusively female sample, while five effect sizes (10 percent) were generated from a mixed sex sample. Finally, this information was not available for four percent of the estimates.

More than three-fourths of the effect sizes (76 percent) were drawn from samples where all types of offenders were included. Only 14 percent of the estimates were generated from samples that were limited to a certain type of offender. Of these, two effect sizes (4 percent) were generated from samples of drug offenders and five effect sizes (10 percent) were calculated from evaluations of sex offenders. The remaining five effect sizes (10 percent) did not have this information available to be coded.

The final sample characteristic coded was the offenders' risk-level. In the vast majority of studies (70 percent), this information was not made available. However, 11 effect sizes (22 percent) were calculated from studies that included all three risk-levels (low-, moderate-, and high-risk). Additionally, four percent of the estimates were generated from samples of only low-risk offenders.

Study Characteristics

In addition to publication and sample characteristics, study characteristics were also recorded. As shown in Table 3.10, the lengths of the shorter and longer sentences, the methodological quality, the measurement of recidivism, and how long the offenders were tracked were coded for each effect size. Concerning the length of incarceration, six categories were created for to code the shorter sentence in the comparison. Sixty-eight percent of the effect sizes
Study Characteristic	k	%
Shorter Length of Sentence		
0-6 Months	19	38.0
7-12 Months	15	30.0
13-18 Months	11	22.0
19-24 Months	1	2.0
24+ Months	3	6.0
Missing	1	2.0
Longer Length of Sentence		
0-12 Months	2	4.0
13-24 Months	12	24.0
25-36 Months	2	4.0
37+ Months	33	66.0
Missing	1	2.0
Methodological Quality		
Randomized or Matching Design	8	16.0
Nonrandomized Design with	12	24.0
Strong Evidence of Initial		
Equivalence		
Nonrandomized Design with	10	20.0
Acknowledged Differences		
Between Groups		
Nonrandomized Design with	20	40.0
Major Differences Between		
Groups		
Missing	0	0.0
Recidivism Measure		
Arrest/Charged by Police	6	12.0
Conviction	6	12.0
Reimprisonment	35	52.0
Parole/Technical Violation	0	0.0
Other	3	6.0

 Table 3.10. Descriptive Statistics: Study Characteristics for Shorter versus Longer Lengths of Incarceration

Table 3.10. Continued

Study Characteristic	k	%
Length of Follow-Up Period		
0-12 Months	13	26.0
13-24 Months	12	24.0
25+ Months	25	50.0

were calculated from studies that had sentence lengths of less than one year (38 percent for zero to six months and 30 percent for seven to 12 months). An additional 22 percent of the estimates were derived from samples with a sentence of 13 to 18 months. One effect size (2 percent) had a sentence of 19 to 24 months, and three estimates (6 percent) had sentences of over 24 months. Finally, this information was not reported for two percent of the effect sizes.

Information was also coded on the length of the longer sentence being compared to the shorter sentence in the analysis. The majority of effect sizes were generated from samples with longer sentence lengths consisting of 37 months or more (66 percent). Four percent were computed from studies with sentences of 25 to 36 months. Another 24 percent of estimates compared sentences of 13 to 24 months to shorter sentences. Two effect sizes (4 percent) compared sentences of zero to 12 months to shorter sentences. Lastly, this information was missing for one effect size (2 percent).

The methodological quality of the studies was also assessed. Eight estimates (16 percent) were generated from studies with randomized or matching designs. Another 24 percent were derived from nonrandomized studies with strong evidence of initial equivalence between the two groups. Additionally 20 percent of the estimates were calculated from evaluations with nonrandomized designs with acknowledged differences between the two groups being compared. Lastly, 20 effect sizes (40 percent) were extracted from methodologically weak studies with nonrandomized designs with major differences between the two comparison groups.

Finally, the manner in how recidivism was measured and the length the offenders were tracked were reported. For the majority of effect sizes (52 percent), recidivism was measured as reimprisonment. The next common measurements were reconviction (12 percent) and rearrest (12 percent), followed by other measures (6 percent). Concerning the length of the follow-up

period, half of the effect sizes were derived from studies with 25 or more month follow-ups. Twelve effect sizes (24 percent) were extracted from studies that tracked offenders for 13 to 24 months. Finally, thirteen effect sizes (26 percent) followed offenders for zero to 12 months.

Effect Sizes

As was reported, Table 3.4 presents the mean effect sizes, weighted mean effect sizes, and the 95 percent confidence intervals for each mean effect size. When examining the third line of the table, it becomes apparent that 50 effect sizes from 138, 685 non-unique individuals produced a mean effect size of -.02 (sd = .13) and a weighted mean effect size of .0495. The mean effect size (*r*) was not statistically significant as the confidence interval included zero (-.05 to .02). However, zero did not fall within the confidence interval for the weighted mean effect size, thus indicating a statistically significant result (.0442 to .0548). Consequently, longer sentences are associated with roughly a five percent decrease in recidivism.

The Q statistic testing for the homogeneity of effect sizes was also calculated for the shorter versus longer sentence comparisons. The Q was statistically significant suggesting the presence of outliers. Consequently, any value greater than three standard deviations from the mean and those values that were discontinuous on the distribution were eliminated. After these nine values were removed, the mean effect size and the weighted mean effect size and their confidence intervals were recalculated. As can be seen in the fourth line of Table 3.4, the removal of outliers resulted in a slight deflation of both the mean effect size and weighted mean effect size is negative and statistically nonsignificant (r = -.01, sd = .12), while the weighted mean effect is positive and statistically significant ($z^+ = .0302$). Thus, the substantive findings are not drastically changed by the removal of outliers.

Fail-Safe N

Although the mean effect size is not statistically significant, the weighted mean effect size is statistically significant. Since the weighted mean effect size is utilized in the fail-safe N formula, this was computed to determine the number of studies needed to reduce the effect size to .001. For the weighted mean effect size including outliers, an additional 1,309 studies would be needed to reduce the weighted mean effect size to the alternative effect size of .001. Consequently, this effect size is quite sound and can be viewed with much confidence.

This statistic was also computed for the weighted mean effect size excluding the outliers. In order to reduce the weighted mean effect size to .001, 642 additional studies are needed. Again, with such a high number, it is highly unlikely that there are over 640 additional studies that were not recovered for this analysis. Consequently, this weighted mean effect size can be considered stable.

Moderating Variables

As with the non-custodial versus custodial sanction analyses, an attempt was made to uncover significant moderating variables. Again, many of the moderators that were coded were unable to be analyzed due to the vast amount of missing data. Specifically, more than 50 percent of the cases reported missing data on the many variables including criminal history, social bonds (marital status and employment status), other criminogenic needs (substance abuse and mental health), and race. Thus, the number of moderating effects that could be examined was significantly hindered due to the amount of missing data.

Although many variables could not be analyzed as moderators, some significant moderating effects were still found. Utilizing the same techniques described in the non-custodial versus custodial analyses where the confidence intervals within categories of a variable are

compared to one another, two publication characteristics (see Table 3.11), one sample characteristic (see Table 3.12), and two study characteristics (see Table 3.13) were found to have significant moderating effects. Each of these will be discussed below.

First, as shown in Table 3.11, significant moderating effects were found for publication type and author affiliation. Among publication type, the confidence intervals around the mean effect sizes for federal reports (r = .11) and journal articles (r = .07) do not overlap, indicating a significant difference between these two formats. As can be seen, the mean effect size for journal articles is negative, suggesting a criminogenic effect for longer sentences, while the mean effect size is positive for federal reports, indicating a deterrent effect of lengthier sentences. Additionally, the mean effect size for journal articles can be viewed as more precise as the confidence interval does not exceed a width of .10, while the estimate for federal reports should be deemed less precise since the confidence interval has a width of .17 exceeding the .10 cut-off suggested by Snook et al. (2007).

Although the reason for this difference is beyond the scope of this study, one possible explanation for this finding is that often time in federal reports there is direct involvement of the author, whereas as in journal articles this is less likely. Thus, it may be due to the involvement of the evaluator, as well as the need for federal reports to produce certain results to maintain funding, that could be contributing the differences in mean effect sizes between these two types of publication.

The second publication characteristic showing a significant moderating effect is the affiliation of the author. When comparing the confidence intervals between each category, two were found to not overlap, university (r = -.09) and mixed (r = .09) affiliations. Studies with a university author affiliation were associated with an increase in recidivism for longer sentences,

Publication Decade 1960 0 -	Publication Characteristic	k	Ν	r	sd	95% CI
1960 0 - - - 1970 17 $5,637$ 08 .12 14 to02 1980 6 11,686 .01 .16 11 to .13 1990 2 471 02 .02 18 to .13 2000 25 120,981 .02 .13 03 to .07 Publication Type Book 4 $23,252$ 04 .10 20 to .12 Book Chapter 1 174 .03 - - - Federal Report 6 14,465 .11 .08 .02 to .19 State/Local Report 17 89,866 .01 .13 06 to .08 Journal 21 9,037 07 .12 12 to .02 Thesis/Dissertation 1 1,891 03 - - - - - - - - - - - - - - - 0 - - - - - 0 - - - - - <t< td=""><td>Publication Decade</td><td></td><td></td><td></td><td></td><td></td></t<>	Publication Decade					
1970 17 $5,637$ 08 $.12$ 14 to 02 1980 6 $11,686$.01 .16 11 to $.13$ 1990 2 471 02 .02 18 to $.13$ 2000 25 $120,981$.02 $.13$ 03 to $.07$ Publication Type Book 4 $23,252$ 04 $.10$ 20 to $.12$ Book Chapter 1 174 $.03$ $$ $$ Federal Report 6 $14,465$ $.11$ $.08$ $.02$ to $.19$ State/Local Report 17 $89,866$ $.01$ $.13$ 06 to $.02$ Thesis/Dissertation 1 $1,891$ 03 $$ $$ Other 0 $$ $$ $$ $$ $$ Mixed 4 $5,745$ $.10$ $.06$ $.002$ to $.20$ Other 0 $$ $$ $$ $$ Missing 6 $23,550$ 03	1960	0				
1980 6 $11,686$.01 .16 11 to .13 1990 2 471 02 .02 18 to .13 2000 25 $120,981$.02 .13 03 to .07 Publication Type Book 4 $23,252$ 04 .10 20 to .12 Book Chapter 1 174 .03 $$ $ -$ Federal Report 6 $14,465$.11 .08 .02 to .19 State/Local Report 1 $1,891$ 03 $$ $$ $-$ Other 0 $$ $$ $$ $$ $$ $$ Author Affiliation 1 $1,891$ 03 $$ $$ $$ $$ $$ Mixed 4 $5,745$.10 .06 .01 09 to 0.5 Federal Agency 18 $32,983$ 02 .14 09 to 0.5 Mixed 4 5	1970	17	5,637	08	.12	14 to02
1990 2 471 02 $.02$ 18 to $.13$ 2000 25 120,981 $.02$ $.13$ 03 to $.07$ Publication Type Book 4 23,252 04 $.10$ 20 to $.12$ Book Chapter 1 174 $.03$ $$ $$ Federal Report 6 $14,465$ $.11$ $.08$ $.02$ to $.19$ State/Local Report 17 $89,866$ $.01$ $.13$ 06 to $.08$ Journal 21 $9,037$ 07 $.12$ 12 to $.02$ Thesis/Dissertation 1 $1,891$ 03 $$ $$ Other 0 $$ $$ $$ $$ Mixed 4 $5,745$ $.10$ $.06$ $.01$ to $.20$ Other 0 $$ $$ $$ $$ Mixed 4 $5,745$ $.10$ $.06$ $.002$ to $.20$ Other 0 $$ $$ $$	1980	6	11,686	.01	.16	11 to .13
2000 25 120,981 .02 .13 03 to .07 Publication Type Book 4 23,252 04 .10 20 to .12 Book Chapter 1 174 .03 Federal Report 6 14,465 .11 .08 .02 to .19 State/Local Report 17 89,866 .01 .13 06 to .08 Journal 21 9,037 07 .12 12 to .02 Thesis/Dissertation 1 1,891 03 Other 0 - - Mixed 4 5,745 .10 .06 .002 to .20 Other 0 Missing 6 23,550 03 .08 91 to .85 Type of Funding Agent 1 1,891 03 Missing 5 23,426 03 .09 .001 to .17 Other 0	1990	2	471	02	.02	18 to .13
Publication Type Book 4 $23,252$ 04 $.10$ 20 to $.12$ Book Chapter 1 174 $.03$ $$ $$ Federal Report 6 $14,465$ $.11$ $.08$ $.02$ to $.19$ State/Local Report 17 $89,866$ $.01$ $.13$ 06 to $.08$ Journal 21 $9,037$ 07 $.12$ 12 to 02 Thesis/Dissertation 1 $1,891$ 03 $$ $$ Other 0 $$ $$ $$ $$ Muthor Affiliation University 14 $4,719$ 09 $.12$ 16 to 02 State Agency 18 $32,983$ 02 $.14$ 09 to $.05$ Federal Agency 8 $10,278$ $.06$ $.11$ 03 to $.15$ Mixed 4 $5,745$ $.10$ $.06$ $.002$ to $.20$ Other 0 $$ $ -$ Missing 6 $23,550$	2000	25	120,981	.02	.13	03 to .07
Book 4 $23,252$ 04 $.10$ 20 to $.12$ Book Chapter 1 174 $.03$ $$ $$ Federal Report 6 $14,465$ $.11$ $.08$ $.02$ to $.19$ State/Local Report 17 $89,866$ $.01$ $.13$ 06 to $.08$ Journal 21 $9,037$ 07 $.12$ 12 to 02 Thesis/Dissertation 1 $1,891$ 03 $$ $$ $$ Other 0 $$ $$ $$ $$ $$ $$ Author Affiliation University 14 $4,719$ 09 $.12$ 16 to 02 State Agency 18 $32,983$ 02 $.14$ 09 to $.05$ Mixed 4 $5,745$ $.10$ $.06$ $.002$ to $.20$ Other 0 $$ $ -$ Missing 6 $23,550$ $-$	Publication Type					
Book Chapter1174.03Federal Report614,465.11.08.02 to .19State/Local Report1789,866.01.1306 to .08Journal219,03707.1212 to02Thesis/Dissertation11,89103Other0Author Affiliation0University144,71909.1216 to02State Agency1832,98302.1409 to .05Federal Agency810,278.06.1103 to .15Mixed45,745.10.06.002 to .20Other0Missing623,55003.0891 to .85Type of Funding AgentUnfunded239,10607.1212 to .02Agency Funded11,89103State Funded1489,673.02.1406 to .10Federally Funded714,589.09.09.00.01 to .17Other0Missing523,42603.09.14 to .09No2420,13707.1112 to .02Missing124.608.01.12	Book	4	23,252	04	.10	20 to .12
Federal Report614,465.11.08.02 to .19State/Local Report1789,866.01.13 06 to .08Journal219,037 07 .12 12 to 02 Thesis/Dissertation11,891 03 $$ $$ Other0 $$ $$ $$ $$ Author Affiliation11,891 09 .12 16 to 02 State Agency1832,983 02 .14 09 to .05Federal Agency810,278.06.11 03 to .15Mixed45,745.10.06.002 to .20Other0 $$ $$ $$ $-$ Missing623,550 03 .08.91 to .85Type of Funding AgentUnfunded239,106 07 .12 12 to .02Agency Funded11,891 03 $$ $$ State Funded1489,673.02.14 06 to .10Federally Funded714,589.09.09.001 to .17Other0 $$ $$ $$ $$ Missing523,426 03 .09 14 to .09No2420,137 07 .11 12 to 02	Book Chapter	1	174	.03		
State/Local Report 17 89,866 .01 .13 06 to .08 Journal 21 9,037 07 .12 12 to02 Thesis/Dissertation 1 1,891 03 Other 0 Author Affiliation University 14 4,719 09 .12 16 to02 State Agency 18 32,983 02 .14 09 to .05 Federal Agency 8 10,278 .06 .11 03 to .15 Mixed 4 5,745 .10 .06 .002 to .20 Other 0 Missing 6 23,550 03 .08 91 to .85 Type of Funding Agent Unfunded 23 9,106 07 .12 12 to .02 Agency Funded 1 1,891 03 State Funded 14 89,673 .02 .14 06 to .10	Federal Report	6	14,465	.11	.08	.02 to .19
Journal 21 $9,037$ 07 $.12$ 12 to 02 Thesis/Dissertation 1 $1,891$ 03 $$ $$ Other 0 $$ $$ $$ $$ Author Affiliation 0 $$ $$ $$ $$ Minversity 14 $4,719$ 09 $.12$ 16 to 02 State Agency 18 $32,983$ 02 $.14$ 09 to $.05$ Federal Agency 8 $10,278$ $.06$ $.11$ 03 to $.15$ Mixed 4 $5,745$ $.10$ $.06$ $.002$ to $.20$ Other 0 $$ $$ $$ $$ Missing 6 $23,550$ 03 $.08$ 91 to $.85$ Type of Funding Agent Unfunded 23 $9,106$ 07 $.12$ 12 to $.02$ Agency Funded 1 $1,891$ 03 $$ $$ State Funded 14 $89,673$	State/Local Report	17	89,866	.01	.13	06 to .08
Thesis/Dissertation1 $1,891$ 03 $$ $$ Other0 $$ $$ $$ $$ Author AffiliationUniversity14 $4,719$ 09 $.12$ 16 to 02 State Agency18 $32,983$ 02 $.14$ 09 to $.05$ Federal Agency8 $10,278$ $.06$ $.11$ 03 to $.15$ Mixed4 $5,745$ $.10$ $.06$ $.002$ to $.20$ Other0 $$ $$ $$ Missing6 $23,550$ 03 $.08$ 91 to $.85$ Type of Funding AgentUnfunded23 $9,106$ 07 $.12$ 12 to $.02$ Agency Funded1 $1,891$ 03 $$ $$ State Funded14 $89,673$ $.02$ $.14$ 06 to $.10$ Federally Funded7 $14,589$ $.09$ $.09$ $.001$ to $.17$ Other0 $$ $$ $$ $$ Missing5 $23,426$ 03 $.09$ 14 to $.09$ No24 $20,137$ 07 $.11$ 12 to 02 Missing1 $24,608$ $.01$ $.12$ $$	Journal	21	9,037	07	.12	12 to02
Other 0 Author Affiliation University 14 4,719 09 .12 16 to02 State Agency 18 32,983 02 .14 09 to .05 Federal Agency 8 10,278 .06 .11 03 to .15 Mixed 4 5,745 .10 .06 .002 to .20 Other 0 Missing 6 23,550 03 .08 91 to .85 Type of Funding Agent Unfunded 23 9,106 07 .12 12 to .02 Agency Funded 1 1,891 03 State Funded 14 89,673 .02 .14 06 to .10 Federally Funded 7 14,589 .09 .09 .001 to .17 Other 0 Missing 5	Thesis/Dissertation	1	1,891	03		
Author Affiliation University 14 4,719 09 $.12$ 16 to 02 State Agency 18 $32,983$ 02 $.14$ 09 to $.05$ Federal Agency 8 $10,278$ $.06$ $.11$ 03 to $.15$ Mixed 4 $5,745$ $.10$ $.06$ $.002$ to $.20$ Other 0 $$ $$ $ -$ Missing 6 $23,550$ 03 $.08$ 91 to $.85$ Type of Funding Agent Unfunded 23 $9,106$ 07 $.12$ 12 to $.02$ Agency Funded 1 $1,891$ 03 $ -$ State Funded 14 $89,673$ $.02$ $.14$ 06 to $.10$ Federally Funded 7 $14,589$ $.09$ $.09$ $.001$ $.17$ Other 0 $$ $$ $ -$ Missing 5 $23,426$ 03 $.09$ 14 to $.09$ <	Other	0				
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Federal Agency 8 10,278 .06 .11 03 to .15 Mixed 4 5,745 .10 .06 .002 to .20 Other 0 Missing 6 23,550 03 .08 91 to .85 Type of Funding Agent Unfunded 23 9,106 07 .12 12 to .02 Agency Funded 1 1,891 03 State Funded 14 89,673 .02 .14 06 to .10 Federally Funded 7 14,589 .09 .09 .001 to .17 Other 0 Missing 5 23,426 03 .09 .01 to .17 Other 0 Missing 5 23,426 03 .09 .14 to .09 24 20,137	State Agency	18	32,983	02	.14	09 to .05
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Type of Funding AgentUnfunded23 $9,106$ 07 $.12$ 12 to $.02$ Agency Funded1 $1,891$ 03 $$ $$ State Funded14 $89,673$ $.02$ $.14$ 06 to $.10$ Federally Funded7 $14,589$ $.09$ $.09$ $.001$ to $.17$ Other0 $$ $$ $$ Missing5 $23,426$ 03 $.09$ 14 to $.09$ Involvement of EvaluatorYes20 $93,940$ $.04$ $.13$ 02 to $.09$ No24 $20,137$ 07 $.11$ 12 to 02 Missing1 $24,608$ $.01$ $.12$ $$	Missing	6	23,550	03	.08	91 to .85
Unfunded23 $9,106$ 07 $.12$ 12 to $.02$ Agency Funded1 $1,891$ 03 $$ $$ State Funded14 $89,673$ $.02$ $.14$ 06 to $.10$ Federally Funded7 $14,589$ $.09$ $.09$ $.001$ to $.17$ Other0 $$ $$ $$ Missing5 $23,426$ 03 $.09$ 14 to $.09$ Involvement of EvaluatorYes20 $93,940$ $.04$ $.13$ 02 to $.09$ No24 $20,137$ 07 $.11$ 12 to 02 Missing1 $24,608$ $.01$ $.12$ $$	Type of Funding Agent					
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State Funded14 $89,673$.02.1406 to.10Federally Funded714,589.09.09.001 to.17Other0Missing523,42603.0914 to.09Involvement of EvaluatorYes2093,940.04.1302 to.09No2420,13707.1112 to02Missing124,608.01.12	Agency Funded	1	1,891	03		
Federally Funded 7 14,589 .09 .09 .001 to .17 Other 0 Missing 5 23,426 03 .09 14 to .09 Involvement of Evaluator 20 93,940 .04 .13 02 to .09 No 24 20,137 07 .11 12 to 02 Missing 1 24.608 .01 .12	State Funded	14	89,673	.02	.14	06 to .10
Other0Missing5 $23,426$ 03 $.09$ 14 to $.09$ Involvement of EvaluatorYes20 $93,940$ $.04$ $.13$ 02 to $.09$ No24 $20,137$ 07 $.11$ 12 to 02 Missing1 $24,608$ $.01$ $.12$	Federally Funded	7	14,589	.09	.09	.001 to .17
Missing 5 23,426 03 .09 14 to .09 Involvement of Evaluator Yes 20 93,940 .04 .13 02 to .09 No 24 20,137 07 .11 12 to .02 Missing 1 24.608 .01 .12	Other	0				
Involvement of EvaluatorYes2093,940.04.1302 to .09No2420,13707.1112 to02Missing124.608.01.12	Missing	5	23,426	03	.09	14 to .09
Yes2093,940.04.1302 to.09No2420,13707.1112 to02Missing124.608.01.12	Involvement of Evaluator					
No 24 20,137 07 .11 12 to02 Missing 1 24,608 .01 .12	Yes	20	93.940	.04	.13	02 to .09
Missing 1 24.608 .01 .12	No	24	20.137	- 07	.11	12 to - 02
	Missing	1	24.608	.01	.12	

Table 3.11. Mean Effect Sizes: Publication Characteristics for Shorter versus Longer Lengths of Incarceration

Table 3.11. Continued

Publication Characteristic	k	Ν	r	sd	95% CI
Geographic Location					
USA	40	113,888	02	.13	06 to .02
Canada	0				
England	0				
Australia	6	1,182	.01	.13	13 to .14
Other	4	7,147	04	.10	20 to .17

while those with a mixed author affiliation corresponded to decrease in recidivism for those with longer sentences. However, both of these estimates have very wide confidence intervals exceeding the .10 cut-off, suggesting they are not precise estimates of the true parameters.

When examining Table 3.12, one sample characteristic has a significant moderating effect, type of offender. The confidence intervals for the all category (r = -.03) does not overlap with the interval for the sex offender (r = .12) category. This suggests that studies examining only sex offenders showed that longer sentences were associated with a decrease in recidivism, while those studies that included all offenders showed longer sentences associated with a slight increase in recidivism. Thus, longer sentences have a deterrent effect for sex offenders. However, only the mean effect size for all offenders can be seen as a precise estimate of the true parameter as the width is less than .10, while the width of the confidence interval for the mean effect size of sex offenders is .17.

Table 3.13 shows that there are two study characteristics with significant moderating effects: shorter length of sentence and the recidivism measure. First, among the categories of shorter length of sentence, there was no overlap in the confidence intervals for zero to six months (r = .06) and 13 to 18 months (r = .11) sentence lengths. Studies that utilized this shorter length of sentence were associated with a mean effect size showing a deterrent effect for longer sentences, while studies with 13 to 18 months as the shorter sentence length were associated with a decrease in recidivism for shorter sentences as opposed to longer sentences. Additionally, the confidence interval for the mean effect size associated with the zero to six months sentence length is narrow (.10) thus providing a fairly precise estimate of the true parameter, while the confidence interval associated with the 13 to 18 month sentence length is quite wide (.17) providing a less precise estimate.

Sample Characteristic	k	Ν	r	sd	95% CI
Age of Offenders					
Exclusively Adults	18	41,590	.01	.12	05 to .06
Exclusively Juveniles	6	5,381	03	.10	13 to .07
Mainly Adults (over 80%)	11	87,696	.05	.11	01 to .13
Mixed	1	961	28		
Missing	13	3,057	09	.12	16 to01
Sex					
Exclusively Males	23	9,431	01	.12	06 to .04
Exclusively Females	2	149	26	.15	
Mainly Males (over 80%)	18	123,037	01	.11	07 to .04
Mixed	5	5,830	.04	.18	18 to .26
Missing	2	238	04	.10	
Mean Percent Males for Samp	le 41				
Type of Offender in Study					
All	38	133,065	03	.13	07 to .01
Drug	2	1,262	.09	.00	
Sexual	5	3,869	.12	.07	.03 to .20
DUI	0				
Other	5	489	08	.11	21 to . 05
Risk					
Low	4	189	04	.17	23 to .14
Moderate	0				
High	0				
Mixed	11	19,875	01	.09	07 to .05
Missing	35	118,621	02	.14	06 to .03

Table 3.12. Mean Effect Sizes: Sample Characteristics for Shorter versus Longer Lengths of Incarceration

Study Characteristic	k	Ν	r	sd	95% CI
Shorter Length of Sentence					
0-6 Months	19	47,457	.06	.10	.01 to .11
7-12 Months	15	83,917	03	.13	10 to .04
13-18 Months	11	2,759	11	.12	19 to02
19-24 Months	1	240	12		
24+ Months	3	3,176	05	.09	27 to .18
Missing	1	1,136	13		
Longer Length of Sentence					
0-12 Months	2	214	03	.01	
13-24 Months	12	29,270	.01	.11	06 to .08
25-36 Months	2	2,131	07	.06	64 to .50
37+ Months	33	105,934	02	.14	07 to .03
Missing	1	1,136	13		
Methodological Quality					
Randomized or Matching Design	8	1.838	06	.09	13 to .02
Nonrandomized Design with Strong Evidence of Initial	12	6,060	09	.12	17 to01
Fauvalence					
Nonrandomized Design with	10	60 698	01	11	- 07 to 09
Acknowledged Differences	10	00,070	.01	,11	0710.09
Between Groups	20	70.000	0.2	10	02 + - 00
Major Differences Between	20	/0,089	.03	.13	03 to .09
Missing	0				
wiissing	U				
Recidivism Measure					
Arrest/Charged by Police	6	14,465	.11	.08	.02 to .19
Conviction	6	5,465	02	.10	12 to .08
Reimprisonment	35	116,357	04	.13	09 to .002
Parole/Technical Violation	0				
Other	3	2,398	.01	.12	29 to .32

Table 3.13. Mean Effect Sizes: Study Characteristics for Shorter versus Longer Lengths of Incarceration

Table 3.13. Continued

Study Characteristic	k	Ν	r	sd	95% CI
Length of Follow-Up Period					
0-12 Months	13	7,951	09	.12	16 to01
13-24 Months	12	5,418	02	.12	09 to .06
25+ Months	25	125,316	.02	.13	03 to .07

The final significant moderating variable is the measure of recidivism. The confidence intervals for arrest (r = .11) and reimprisonment (r = .04) do not overlap indicating a significant difference between these two types of measurement. Studies utilizing reimprisonment show a reduction in recidivism associated with shorter sentence lengths, while those that use arrest produce a deterrent effect of longer sentences. Further, the confidence interval for arrest is quite wide (.17), indicating an imprecise estimate of the true mean effect size, while the interval for reimprisonment is narrower (within .10), thus suggesting the mean effect is a precise estimate of the true parameter.

Although not a significant moderating effect, one interesting finding concerns the methodological quality of the study. As shown in Table 3.13, the effect sizes extracted from studies with stronger methodological designs (e.g., randomized or matching or strong initial equivalence between the shorter and longer sentence length groups) produced negative mean effect sizes, with the mean effect size associated with nonrandomized designs with strong initial equivalence being significant. These negative mean effect sizes suggest that studies with strong methodological designs find a criminogenic influence of longer sentences when compared to shorter sentences. Conversely, the mean effect sizes for the studies with weaker methodological designs were positive, suggesting a deterrent effect of longer sentence lengths. However, neither of these estimates were statistically significant. Regardless of this change in direction for the mean effect size, the analyses showed that the estimates across the four categories of methodological quality were not significantly different from one another. Even though there is no significant moderating effect, this still has implications for future research. Researchers should employ more methodologically sound studies that ensure the initial equivalence between the groups of inmates receiving shorter and longer sentence lengths. It may be possible that the

deterrent effect of longer sentences is due to the differences between those sentenced to longer and shorter sentences. Thus, when these differences are taken into account, it may be possible that no effect or a slight criminogenic effect is discovered for longer lengths of incarceration as compared to short lengths of imprisonment.

CONDITIONS OF CONFINEMENT

Publication Characteristics

The last question addressed in this dissertation assessed the impact of harsher versus less harsh conditions on subsequent recidivism. Just as the analyses examining the impact of noncustodial and custodial sanctions and longer versus shorter sentences, information was coded about the publication, sample, and study characteristics of the effect sizes. As shown in Table 3.14, all 15 effect sizes were derived from studies conducted in the 1990s (33.3 percent) and the current decade (66.7 percent). Additionally, 11 of the 15 effect sizes (73.3 percent) were extracted from studies published in state/local reports, followed by 20 percent reported in journal articles, and 6.7 percent in other sources. The author was affiliated with a state agency for 80 percent of the effect sizes, a university for 13.3 percent, and had a mixed affiliation for 6.7 percent of the estimates. Further, 80 percent of the estimates were generated from state funded reports, 13.3 were extracted from agency funded evaluations, and 6.7 percent were calculated from unfunded studies. The evaluator was involved in 80 percent of the effect sizes and uninvolved in 20 percent. Finally, all 15 effect sizes were derived from studies conducted in the United States.

Publication Characteristic	k	%
Publication Decade		
1960	0	0.0
1970	0	0.0
1980	0	0.0
1990	5	33.3
2000	10	66.7
Publication Type		
Book	0	0.0
Book Chapter	0	0.0
Federal Report	0	0.0
State/Local Report	11	73.3
Journal	3	20.0
Thesis/Dissertation	0	0.0
Other	1	6.7
Author Affiliation		
University	2	13.3
State Agency	12	80.0
Federal Agency	0	0.0
Mixed	1	6.7
Other	0	0.0
Missing	0	0.0
Type of Funding Agent		
Unfunded	1	6.7
Agency Funded	2	13.3
State Funded	12	80.0
Federally Funded	0	0.0
Other	0	0.0
Missing	0	0.0
Involvement of Evaluator		
Yes	12	80.0
No	3	20.0
Missing	0	0.0

Table 3.14. Descriptive Statistics: Publication Characteristics for Less Harsh versus Harsher Conditions of Confinement

Table 3.14. Continued

Publication Characteristic	k	%
Geographic Location		
USA	15	100.0
Canada	0	0.0
England	0	0.0
Australia	0	0.0
Other	0	0.0

Sample Characteristics

Table 3.15 presents the sample characteristics for the 15 effect sizes examining the impact of the conditions of confinement on recidivism. Sixty percent of the estimates were extracted from exclusively adult samples, 33.3 percent were generated from mainly adult samples, and 6.7 percent were computed from exclusively juvenile samples. When examining the sex of the sample, 11 effect sizes (73.3 percent) were derived from mainly male samples, with the remaining four estimates calculated from mixed samples. All 15 effect sizes were drawn from samples that included all types of offenders, and in no study was the risk-level of offenders reported.

Study Characteristics

Table 3.16 reports the study characteristics for the conditions of confinement effect sizes. Eleven estimates (73.3 percent) were calculated from reports with a weak methodological design (e.g., nonrandomized design with major differences between the comparison groups). Another 6.7 percent were drawn from nonrandomized designs with acknowledged group differences and nonrandomized designs with strong evidence of initial equivalence, respectively. Only two estimates (13.4 percent) were extracted from studies with a strong methodological design (randomized or matched designs).

The last characteristics reported concerns the measurement of recidivism and the length of the follow-up period. Recidivism was measured as reimprisonment for 93.3 percent of the effect sizes and reconviction for 6.7 percent. Offenders were tracked for 25 or more months in 46.7 of the estimates, 13 to 24 months for 40 percent of the effect sizes, and 0 to 12 months for 13.3 percent.

Sample Characteristic	k	%
Age of Offenders		
Exclusively Adults	9	60.0
Exclusively Juveniles	1	6.7
Mainly Adults (over 80%)	5	33.3
Mixed	0	0.0
Missing	0	0.0
Sex		
Exclusively Males	0	0.0
Exclusively Females	0	0.0
Mainly Males (over 80%)	11	73.3
Mixed	4	26.7
Missing	0	0.0
Mean Percent Males for Sample	15	85.4
Type of Offender in Study		
All	15	100.0
Drug	0	0.0
Sexual	0	0.0
DUI	0	0.0
Other	0	0.0
Risk		
Low	0	0.0
Moderate	0	0.0
High	0	0.0
Mixed	0	0.0
Missing	15	100.0

Table 3.15. Descriptive Statistics: Sample Characteristics for Less Harsh versus Harsher Conditions of Confinement

Study Characteristic	k	%
Methodological Quality		
Randomized or Matching Design	2	13.3
Nonrandomized Design with	1	6.7
Strong Evidence of Initial		
Equivalence		
Nonrandomized Design with	1	6.7
Acknowledged Differences		
Between Groups		
Nonrandomized Design with	11	73.3
Major Differences Between		
Groups		
Missing	0	0.0
Recidivism Measure		
Arrest/Charged by Police	0	0.0
Conviction	1	6.7
Reimprisonment	14	93.3
Parole/Technical Violation	0	0.0
Other	0	0.0
Length of Follow-Up Period		
0-12 Months	2	13.3
13-24 Months	6	40.0
25 + Months	7	46.7
Missing	0	0.0

 Table 3.16. Descriptive Statistics: Study Characteristics for Less Harsh versus Harsher

 Conditions of Confinement

Effect Sizes

As was shown in the fifth line of Table 3.4, 15 effect sizes from 204,926 non-unique offenders produced a mean effect size of -.16 (sd = .10) and a weighted mean effect size of -.1535. Since the confidence intervals for both of these estimates do not include zero, these findings can be interpreted as having a significant, negative relationship with recidivism. In more exact terms, using the BESD, which divides the mean effect size (r) by two then adds and subtracts that value from .50, placement in harsher conditions is associated with a recidivism rate of 58 percent, while placement in less harsh conditions corresponds to a rate of 42 percent. Consequently, harsher conditions result in an increase, rather than a decrease, in post-release reoffending, which directly contradicts the assumptions of specific deterrence theory.

To determine if the effect sizes were homogeneous, the Q statistic was calculated. This statistic was statistically significant indicating the presence of outliers. After the removal of the five outlying effect sizes, the mean effect size and weighted mean effect sizes and their respective confidence intervals were recalculated. As can be seen on the last line of Table 3.4, the mean effect size was slightly inflated (r = -.17, sd = .10), while the weighted mean effect size was slightly deflated ($z^+ = -.1330$). However, both estimates were statistically significant as the confidence intervals did not include the value of zero. Additionally, these estimates did not drastically change from the values calculated with the inclusion of outliers suggesting that the impact of outliers is not substantial.

Fail-Safe N

The fail-safe N was also calculated to determine the number of studies to reduce the weighted mean effect size to a value of .001. Using the formula created by Lipsey and Wilson (2001), an additional 2,287 studies are needed to reach a value of .001. This was also computed

for the weighted mean effect size with outliers removed. For this estimate, an additional 912 studies are required to produce an effect size of .001. In light of these large numbers, it can be argued that publication bias is not a problem for these analyses.

Moderating Variables

Finally, just as with the other two research questions, an attempt was made to determine if there were any significant moderating effects. Again, many of the variables could not be analyzed as there was a vast amount of missing data. Also, due to the small number of studies examining the conditions of confinement, which produced only 15 effect sizes, there was not much data in order to find moderating effects. In fact, when examining Tables 3.17, 3.18, and 3.19, there was no instance of a moderating effect for any of the variables included in the analyses. Consequently, as elaborated in Chapter IV, future research should be conducted on the conditions of confinement in order to more fully understand the impact that conditions of confinement have on the post-release offending of inmates.

CONCLUSION

This chapter has presented the results of several analyses assessing the impact of imprisonment on recidivism. The analyses have shown that for two of the three research questions there is a criminogenic effect of incarceration. In particular, custodial sanctions and placement in harsh conditions are both associated with an increase in post-release offending behavior. However, a small deterrent effect was found for one of the research questions with longer sentences corresponding to a slight decrease in recidivism. It was also discovered that the effects found for non-custodial versus custodial sanctions and sentence length were moderated by various characteristics, such as the measurement of recidivism, publication type, type of

Publication Characteristic	k	Ν	r	sd	95% CI
Publication Decade					
1960	0				
1970	0				
1980	0				
1990	5	4.672	23	.12	37 to08
2000	10	200,254	13	.08	19 to07
Publication Type					
Book	0				
Book Chapter	0				
Federal Report	0				
State/Local Report	11	83,947	15	.05	18 to11
Journal	3	5,695	22	-23	78 to .24
Thesis/Dissertation	0				
Other	1	115,284	16		
Author Affiliation					
University	2	140	35	.03	
State Agency	12	199,231	15	.05	18 to12
Federal Agency	0				
Mixed	1	5,555	.04		
Other	0				
Missing	0				
Type of Funding Agent					
Unfunded	1	5.555	.04		
Agency Funded	2	140	35	.03	
State Funded	12	199.231	15	.05	18 to12
Federally Funded	0				
Other	0				
Missing	0				
Involvement of Evaluator					
Yes	12	199 231	- 15	.05	18 to - 12
No	3	5.695	22	.23	78 to34
Missing	0				

Table 3.17. Mean Effect Sizes: Publication Characteristics for Less Harsh versus Harsher Conditions of Confinement

Table 3.17. Continued

Publication Characteristic	k	Ν	r	sd	95% CI
Geographic Location					
USA	15	204,926	16	.10	21 to11
Canada	0				
England	0				
Australia	0				
Other	0				

Sample Characteristic	k	Ν	r	sd	95% CI
Age of Offenders					
Exclusively Adults	9	134,355	18	.11	27 to09
Exclusively Juveniles	1	5,555	.04		
Mainly Adults (over 80%)	5	65,016	17	.03	20 to13
Mixed	0				
Missing	0				
Sex					
Exclusively Males	0				
Exclusively Females	0				
Mainly Males (over 80%)	11	200,164	16	.12	24 to08
Mixed	4	4,762	17	.03	22 to12
Missing	0				
Mean Percent Males for Samp	le 15				
Type of Offender in Study					
All	15	204,926	16	.10	22 to11
Drug	0				
Sexual	0				
DUI	0				
Other	0				
Risk					
Low	0				
Moderate	0				
High	0				
Mixed	0				
Missing	15	204,926	16	.10	22 to11

Table 3.18. Mean Effect Sizes: Sample Characteristics for Less Harsh versus Harsher Conditions of Confinement

Study Characteristic	k	Ν	r	sd	95% CI
Methodological Quality					
Randomized or Matching Design	2	140	35	.03	
Nonrandomized Design with	1	5,555	.04		
Equivalence					
Nonrandomized Design with Acknowledged Differences	1	60,254	16		
Between Groups					
Nonrandomized Design with Major Differences Between	11	138,977	15	.05	18 to11
Groups					
Missing	0				
Recidivism Measure					
Arrest/Charged by Police	0				
Conviction	1	5,555	.04		
Reimprisonment	14	199,371	18	.09	23 to13
Parole/Technical Violation	0				
Other	0				
Length of Follow-Up Period					
0-12 Months	2	5,625	15	.26	
13-24 Months	6	6,766	16	.11	28 to04
25 + Months	7	192,535	17	.03	19 to14
Missing	0				

Table 3.19. Mean Effect Sizes: Study Characteristics for Less Harsh versus Harsher Conditions of Confinement

sanction, and sentence length. The next chapter will discuss the theoretical and policy implications of these findings as well as suggesting directions for future research.

CHAPTER IV

DISCUSSION

Since the 1970s, incarceration has become one of the United States's main responses to solving the crime problem (Abramsky, 2007; Beckett, 1997; Clear, 1994; Currie 1985, 1998; Garland, 2001; Gottschalk, 2006; Lynch, 2007; Simon, 2007; Tonry, 2004, Wacquant, 2001; Whitman, 2003). The adoption of this strategy as a way to combat the crime problem has resulted in the removal from society and placement behind bars of more than 2.4 million Americans, corresponding to more than 1 in every 100 United States citizens currently living in a jail or prison cell each day (Warren, 2008). Although, more than two million people are incarcerated, the majority, in fact, a full 93 percent of individuals sentenced to prison, will be released back into society (Hughes and Wilson, 2003; Petersilia, 2003; Useem and Piehl, 2008). With more than 1,700 individuals exiting the prison gates and entering back into community each day, it is imperative, in this era of accountability, to understand the impact that the prison experience has on the reoffending behavior of criminals (Petersilia, 2003; Travis, 2005).

Although a large amount of research has been conducted on explaining the increase in the use of imprisonment as a dominant crime control strategy in the United States, relatively little research has examined the impact that incarceration has on the reoffending behavior of those being released from prison (Gendreau et al., 1999; Nagin et al., 2009; Smith et al., 2002; Villettaz et al., 2006). This dissertation sought to assist in filling this gap in the research. Specifically, three research questions were addressed: 1) When an offender is sentenced to a custodial sanction (e.g., prison, jail) as opposed to being given a non-custodial sanction (e.g.,

probation, fines), does this make the person less likely to reoffend?, 2) Do longer sentences make offenders less likely to reoffend compared to shorter sentences?, and 3) Are harsher prison conditions associated with less recidivism than less harsh conditions? Through the use of meta-analytic techniques, the available research addressing each of these three questions was quantitatively synthesized to determine more precisely the impact of imprisonment on the subsequent criminal behavior of those released from prison.

THEORETICAL IMPLICATIONS

Before summarizing the findings of this dissertation, it is important to reiterate the arguments both for and against the use of incarceration as a crime control strategy. In light of the mass incarceration movement, scholars have embraced two main competing perspectives of the impact that imprisonment has on the future reoffending behavior of those released: 1) a specific deterrent argument and 2) a prisons as a criminogenic environment argument. Those who support the specific deterrence perspective claim that imprisonment should result in a decline in post-release criminal behavior. In particular, this perspective argues that people are rational and will weigh the costs and benefits of engaging in a particular behavior. Because imprisonment is viewed as the harshest and most costly sanction that can be imposed on an individual, with the exception of the death penalty, it is believed that prisons should deter future criminal behavior more so than any other sanction imposed. As a result, deterrence proponents believe that custodial as opposed to non-custodial sanctions, longer versus shorter sentences, and placement in harsher compared to less harsh conditions will result in greater reductions of criminal behavior.

In contrast to the specific deterrence argument, scholars who believe that prisons are a criminogenic environment claim that prisons have an iatrogenic effect on individuals. Instead of leading to a reduction of future criminal behavior, the prison experience results in an increase of post-release offending. This results from a variety of factors, such as the stigma that exprisoners have once released, the severing of prosocial bonds with family, prosocial peers, and work, the exposure to coercive environments, and associations with antisocial peers. Consequently, the hypothesized effects of the prison sentence stand in direct opposition to those proposed by deterrence supporters. Rather, these scholars believe custodial sanctions, longer sentences, and placement in harsher conditions will result in an increase in post-release criminal behavior when compared to non-custodial sanctions, shorter sentences, and placement in less harsh conditions.

The validity of these two perspectives was able to be assessed in this dissertation. The 57 studies examining the impact of non-custodial versus custodial sanctions produced 177 individual effect sizes. The findings showed that there was a significant relationship between receiving a custodial sanction and recidivism, with custodial sanctions corresponding to an increase in recidivism. Consequently, the specific deterrence argument that the experience of a custodial sanction, where the individual is physically removed from the community, becomes a salient cost that a person wishes to avoid in the future and thus subsequently does not commit crime, is not supported. In fact, the exact opposite is found, with custodial sanctions associated with an 11 percent increase in recidivism (r = -.11, sd = .17; $z^+ = -.1440$) when compared to non-custodial sanctions. This corresponds to a recidivism rate of 55.5 percent for those sentenced to custodial sanctions compared to 44.5 percent for those given non-custodial sanctions. In other words, people who receive more severe sanctions, in terms of physical removal from the

community, are more likely to commit crime once released than those who receive less severe sanctions, refuting the propositions put forth by specific deterrence proponents.

More telling, when the individual moderating effects were examined, there was no evidence that the overall mean effect size is masking hidden deterrent effects. In 66 possible comparisons across the 14 moderating variables included in the analyses, there are only six instances were a positive mean effect size is found, indicating a reduction in recidivism for custodial sanctions. However, in all six cases, the confidence intervals surrounding these mean effect sizes included zero, indicating a nonsignificant effect. Consequently, in no instance can it be said that there was a significant specific deterrent effect for custodial sanctions. Thus, it can be argued that there is no support for the specific deterrence claim that custodial sanctions are associated with in a decrease in recidivism. Instead, when examining these 66 comparisons, custodial sanctions consistently result in either no effect on recidivism or an increase in postrelease criminal behavior when compared to non-custodial sanctions contradicting the claims of the specific deterrence perspective.

The specific deterrence argument also is not supported when examining the effects of harsher versus less harsh conditions of confinement. As stated above, specific deterrence argues that the more severe the sanction, the greater the deterrent effect. Following this logic, it is expected that exposure to extremely harsh conditions would result in a reduction of future criminal behavior because the offender would see this coercive environment as a cost they would not want to endure in the future. Thus, according to specific deterrence theory, one would expect to see a reduction in future criminal behavior after the individual experienced a harsher sentence as compared to a less harsh sentence.

However, just as with the findings concerning non-custodial and custodial sanctions, the evidence derived from the 11 studies examining conditions of confinement does not support the specific deterrence perspective. Thus, harsher conditions (measured by the custodial level of the institution) were associated with a significant increase in recidivism when compared to less harsh conditions. In more exact terms, placement in harsher conditions, such as a maximum-security institution, resulted in a 16 percent increase in recidivism when compared to placement in less harsh conditions, such as a minimum-security institution (r = -.16, sd = .10; $z^+ = -.1535$). This corresponds to a recidivism rate of 58 percent for those who serve sentences in higher security institutions to a rate of 42 percent for those serving time in lower security institutions. Therefore, punishing offenders more severely by increasing their surveillance did not result in a reduction of future criminal behavior as predicted by specific deterrence theory.

The only finding that is consistent with the arguments presented by specific deterrence theory concerns the length of incarceration. In the 27 studies addressing sentence length, shorter sentences as opposed to longer sentence were associated with a very slight reduction in recidivism. This is inconsistent with deterrence theory as one would expect longer sentences to be associated with a greater reduction in criminal behavior, because longer sentences would be deemed more severe than shorter sentences. However, when the mean effect size is weighted by sample size, a slight deterrent effect is found with longer sentences associated with approximately a five percent reduction in post-release reoffending (r = -.02, sd = .13; $z^+ = .0495$).

Although this shows slight support for the deterrence argument, it must be kept in mind what this comparison is actually reflecting. In the analyses, the shortest sentence was compared to the longest sentence that had available information or sentences that were greater than 60 months. Thus, in the majority of these comparisons, effect sizes were calculated comparing

sentences of six or 12 months to that of 60 plus months. As a result, in many of the comparisons, an increase of four years in sentence length was associated with only a five percent reduction in criminal behavior. As will be discussed below when addressing the policy implications of the findings, this reduction in recidivism may not be substantial enough to support the increased costs of imprisoning millions of offenders for longer periods of time.

Finding that custodial sanctions and placement in harsh conditions are associated with increases in recidivism has serious theoretical implications for specific deterrence theory. Since imprisonment is arguably the most severe sanction a person can receive in the United States, with the exception of capital punishment, custodial sanctions, compared to all other sanctions available, should be expected to show the strongest association with a reduction in recidivism. However, just as with the other reviews of the research (Gendreau et al., 1999; Nagin et al., 2009; Smith et al., 2002; Villettaz et al., 2006), the findings from this study show that custodial sanctions actually increase reoffending. Additionally, harsher conditions of confinement were also associated with an increase in criminal behavior. Thus, placing people in more unforgiving environments that place many restrictions on their freedom still does not lead to a deterrent effect. Both of these findings refute one of the core propositions at the heart of deterrence theory that as the severity of sanctions increase, less criminal behavior will result. On the other hand, much empirical support is shown for the argument that imprisonment has a criminogenic effect on offenders. Consequently, the claim that "getting tough" with offenders by giving them severe sanctions in harsh environments will scare offenders straight and will be a solution to our crime problem is called into question. Instead, two main questions now emerge. First, in light of the fact of that imprisonment seems to have a no effect or increase the criminal behavior of offenders, why should we continue support imprisonment as a main crime control policy and

lock up millions of people on any given day? And, second, what about the prison experience explains its criminogenic effect and can anything be done to change that experience so a deterrent effect is produced?

POLICY IMPLICATIONS

Not only do the findings of this study have considerable theoretical implications, but there are also substantial policy implications of the results. Just as Martinson (1974, p. 25) poignantly stated in his attack on rehabilitation, the findings of this dissertation could be used to attack the use of imprisonment as a crime control strategy in the United States. To borrow Martinson's language, it could be argued that "with few and isolated expectations, the imprisonment effects that have been reported so far have had no appreciable effect on recidivism." Consequently, just as the proponents of rehabilitation were put on the defensive, forced to produce solid empirical results to show that rehabilitation could be, and under what conditions, effective, proponents of the use of imprisonment should be given the same burden of providing strong empirical evidence that imprisonment can and does reduce the future criminal behavior of those sentenced behind bars. "Get tough" proponents must be held to the standard to show conclusively, just as rehabilitative proponents were forced to do, that the money devoted to the building, staffing, and maintaining of prisons is a worthwhile endeavor.

Public Safety and Taxpayer Costs

In this era of accountability, it is imperative that it is known what impacts the mass incarceration movement is having on the public's safety and at what cost. As shown above, if the goal and the justification the use of imprisonment is to specifically deter individuals from repeating their criminal behavior, this is not supported by the empirical research. Custodial

sanctions and harsher prison conditions were associated with more than a ten percent increase in recidivism. Consequently, prisons are not achieving the claim by "get tough" supporters that inflicting penal harm on individuals results in a reduction in crime. On the other hand, if the goal of the use of imprisonment is to incapacitate and/or to serve as a retributive response to criminal behavior, the impact of the sanction on the future recidivism of released prisoners is not especially relevant. However, one must be cognizant of the costs of achieving those goals through imprisonment.

The inordinate use of imprisonment as a response to crime costs taxpayers billions of dollars each year. It is estimated that states now spend over \$52 billion annually in corrections costs, corresponding to one in every 15 state general discretionary dollars or 6.8 percent of states' general funds (Pew Center on the States, 2009; Warren, 2008). More exact, it costs taxpayers \$79 per day or approximately \$29,000 annually to place a single person behind bars (Pew Center on the States, 2009). This means that many dollars are being diverted from other public expenditures including healthcare and education to fund the use of imprisonment as one of our main crime control policies. For every dollar spent on corrections, it is a dollar not spent in another area.

Although it was found that longer sentences were associated with a five percent reduction in criminal behavior, in light of the figures presented above, it must be questioned if the slight reduction in crime is worth the cost. As stated before, many of the comparisons the analyses concerning length of incarceration were comparing sentences of six months or 12 months to sentences of more than 60 months. Thus, the five percent reduction in crime would correspond to a cost of \$116,000 (\$29,000 x at the minimum, four additional years of incarceration) per inmate. Policymakers must ask themselves if that additional \$116,000 per inmate is best spent

on achieving an overall five percent reduction in recidivism or would be better spent on other public programs such as early childhood education programs, which have proven crime prevention effects (Schweinhart, Montie, Xiang, Barnett, Belfield, and Nores, 2005; Warren, 2008).

In stark contrast to the massive amount of spending on custodial sanctions, non-custodial sanctions, or community sanctions, are a fraction of the cost. The average per diem costs for community correctional sanctions range from \$3.42 to roughly \$7.50, corresponding to an annual cost ranging between \$1,250 and \$2,750 (Pew Center on the States, 2009). This is only four to nine percent of the costs of incarceration. Additionally, many community correctional sanctions require the offender to pay a portion of its costs, thus further reducing the per diem costs paid by taxpayers.

When these figures are combined with the results of this dissertation, which found custodial sanctions were associated with an 11 percent increase in recidivism, the justification for the continued use of mass incarceration is called into question. Because prisons do not reduce the subsequent reoffending of offenders once they are released and are costing taxpayers billions of dollars each year while non-custodial sanctions are associated with a reduction in crime at a much lower cost, it may be time for the United States to begin rethinking its crime control policies. In fact, the moderating analyses indicated that sentences to prison and shock probation (where the individual is placed in prison for a short period of time then released on probation) were especially associated with an increase in recidivism. Consequently, custodial sanctions, particularly prison and shock probation sentences, should be used sparingly because they may be contributing to the very problem they are attempting to solve.

Instead, policymakers should begin to examine various non-custodial sanctions—such as fines, restitution, probation, community service, and day reporting centers-as alternatives to imprisonment. Further, researchers should begin to single out the effects of different noncustodial sanctions in order to determine their differential impacts on recidivism. As shown in the moderating variable analyses, sentences to probation and probation with certain conditions such as treatment, attendance at a day reporting center, or restitution—were associated with larger reductions in recidivism when compared to other non-custodial sanctions such as electronic monitoring/house arrest and nonresidential programs. By doing so, policymakers could be armed with the empirical evidence to show the public that certain non-custodial sanctions are associated with large reductions in reoffending and at a fraction of the cost. This combination may be a powerful argument used to gain public support for the use of noncustodial sanctions over the "get tough" sanctions that have been supported, without empirical evidence and at a high cost, for the past 40 years. This policy change could result in both an increase in public safety and in the saving of billions of dollars annually that could be diverted to other social welfare programs.

Reentry Programs

As shown above, custodial sanctions and placement in harsh prison conditions are associated with a considerable increase in recidivism (11 percent and 16 percent, respectively). As it is highly unlikely that the United States will entirely abandon the use of imprisonment as a crime control strategy, it is imperative that the criminogenic effects of prisons are somehow tempered before offenders are released back into the community. There are two main ways in which this could be done: reentry programs prior to release and rehabilitation while offenders are
serving their sentences. If either of or both of these types of programs were adopted, it may be possible to reverse the iatrogenic effect of the prison experience.

Reentry programs attempt to reintegrate offenders back into the community once they are released from prison. Many of these programs attempt to provide substance abuse and mental health treatment, life skills, housing, vocational and work skills, and attempt to establish or reestablish stable connections in the community in order to ease the transition from prison to the community. These programs seek to develop a partnership between the community, criminal justice agencies, and social service agencies in order to provide a comprehensive release plan for returning inmates (Taxman, Young, Bryne, Holsinger, and Anspach, 2002; Travis, 2005). In order for reentry to be successful, there must be collaboration among these three entities.

By providing returning offenders with a these skills and resources, many of the criminogenic facets of the prison experience can be tempered. For example, prisons often sever bonds with prosocial people and activities. By helping offenders reestablish ties with their family and providing them with work and vocational skills, this allows them to develop prosocial associations and routine activities that reduce their likelihood of returning to a life of crime. Similarly, by addressing their mental health, physical health, and substance abuse problems, offenders are free from the barriers that often make obtaining and maintaining work in the community and forming relationships with prosocial others difficult.

Reentry programs are beneficial because offenders are just not thrust back into the community after release to fend for themselves equipped with few supports and skills. Rather, reentry programs allow offenders to reintegrate into society with a solid support and resource system available to guide each step of their transition. Thus, reentry programs may lessen the

criminogenic effect of a prison sentence by providing the needed tools and skills to facilitate a successful assimilation back into society.

Rehabilitation

Although reentry programs have much promise, they often occur at the end of the offender's sentence. However, there is much time between the time offenders are sentenced and the time they are released that could be utilized to alter their criminogenic tendencies. One way to alter these crime-producing characteristics is the use of rehabilitation or treatment programs. The current research has shown that rehabilitation can be and is quite effective if it follows the "principles of effective intervention" (Andrews, 1989; Andrews and Bonta, 2010; Andrews, Bonta, and Hoge, 1990; Cullen and Jonson, in press-c; Gendreau, 1996; Gendreau, Smith, and French, 2006). In particular, programs that target high-risk offenders, utilize behavioral and cognitive-behavioral treatment modalities, are multimodal, focus on the criminogenic needs of offenders, are sufficiently intensive, and are matched with the offenders' learning styles and abilities have been shown to produce substantial reductions in subsequent criminal behavior (Andrews, 1989; Andrews, 1989; Andrews, 1989; Andrews, 1989; Andrews, 1989; Andrews, 1989; Ordereau, 1996).

Much research has been conducted on the effect of rehabilitation on the reoffending behavior of offenders. In an initial effort, Andrews, Zinger, Hoge, Bonta, Gendreau, and Cullen, conducted a meta-analysis of 80 studies examining whether or not programs that followed the principles of effective intervention were effective in reducing recidivism. They hypothesized that interventions that targeted high-risk offenders and their criminogenic needs and were behavioral or cognitive-behavioral in nature would be more effective than the interventions that did not adhere to the risk, need, and responsitivity principles. They found overall there was an effect size of 0.10 associate with treatment programs, or a 10 percent reduction in recidivism. However, there was much heterogeneity in effect sizes. Appropriate programs (those that targeted high risk offenders, their criminogenic needs and were behavioral or cognitive-behavioral in nature) were the most effective and associated with a 30 percent reduction in recidivism. On the other hand, inappropriate programs, or those programs that did not target high risk offenders, targeted noncriminogenic needs, and/or were not behavioral or cognitive-behavioral, had an effect size of -0.06 or were associated with a six percent increase in recidivism. Therefore, they found overwhelming support that rehabilitation is effective and can reduce recidivism by a substantial amount when following the principles of effective intervention.

The findings of this initial effort have been confirmed multiple times. In a meta-analysis of 443 studies of juveniles, Lipsey (1992) found 64 percent of treatment programs were associated with an average 10 percent reduction in recidivism. However, certain programs were more likely to reduce recidivism than others. Those that were structured, focused, behavioral, and skill oriented were associated with a larger reduction in recidivism (10-20 percent) than those that were less structured, less focused, and based on deterrence or control strategies. In fact, deterrence programs, those that increased the severity of punishment, were associated with an increase in recidivism.

More recently, Lipsey and Cullen (2007) conducted "a review of systematic reviews" of correctional interventions on subsequent criminal behavior and reached similar conclusions. Summarizing across eight "meta-analyses of the effects of rehabilitation treatment generally on recidivism," they showed that treatment programs were consistently associated with reductions in reoffending (2007, p. 303). In fact, they discovered that none of the meta-analyses "found less

than a 10 percent reduction in recidivism," and that "most of their mean effect sizes represent recidivism reductions in the 20 percent range, varying upward to nearly 40 percent" (p. 303).

As can be clearly seen above, the extant research has confirmed that rehabilitation can be effective crime control policy. Since the U.S. is unlikely to abandon the use of prisons, rehabilitation should be a major component of the prison experience. While offenders are serving time in prison, they should be exposed to intensive treatment. Similarly, they should not be subjected to harsh conditions with little contact and resources available to them. As the findings of this study have shown, harsh prison environments are associated with an increase, rather than a decrease, recidivism. Consequently, prisons should be transformed in to therapeutic environments where offenders can be engaged in rigorous treatment programs that follow the principles of effective intervention.

An example of this type of intervention is a "therapeutic community," which is a treatment program based around cognitive-behavioral intervention, social learning, role modeling, and positive peer culture (Taxman and Bouffard, 2002). A meta-analysis by Pearson and Lipton (1999) found that therapeutic communities were associated with a 13.3 percent reduction in post-release criminal behavior. These findings were confirmed in a 2007 meta-analysis of 66 evaluations conducted by Mitchell, Wilson, and MacKenzie. Mitchell and colleagues reported that therapeutic communities significantly reduced both the recidivism and drug use of its participants. Finally, in a 2009 meta-analysis conducted by Drake, Aos, and Miller, therapeutic communities were associated with a six to 21 percent decrease in recidivism. Thus, the research has consistently demonstrated that prisons based on the principles of effective intervention can result in reductions of recidivism, whereas prisons focused on the infliction of harm on offenders are associated with increases in post-release reoffending behavior.

Consequently, policies that focus on transforming prisons into therapeutic environments should begin replace the current "get tough" rhetoric calling for harsher prison conditions if prisons are hoped to produce a reduction in future criminal behavior.

FUTURE DIRECTIONS

Although 85 studies were found to be eligible for analyses in this dissertation, there is room for much more research to be conducted on the role of imprisonment on the subsequent criminal behavior of offenders. First, the question still remains why prisons increase recidivism. What exactly is it about the prison experience that causes it to have a criminogenic effect on offenders? Second, the research on the impact of the conditions of confinement is based on relatively crude measures, such as institutional security level. Consequently, more research specifically focusing on this topic should be untaken. Third, more research from around the world should be conducted. This analysis only examined those studies that were reported in English. Other non-English speaking countries, with their differing correctional systems, may find different results concerning the impact of imprisonment on recidivism. Finally, more thorough research needs to be conducted in general. As was shown, the effects of many moderating variables could not be analyzed due to the amount of missing data. Thus, the quality of primary research studies should be improved. Each of these future directions will be discussed below.

Unraveling the "Black Box"

The majority of the findings from this study found that imprisonment is associated with an increase in post-release offending of released inmates, which is consistent with the results in the prior reviews of the research. However, a major limitation of this study is that it cannot be determined why custodial sanctions and harsher conditions contribute to an increase in recidivism (Gendreau et al., 1999; Nagin et al., 2009; Smith et al., 2002; Villettaz et al., 2006). Even though it is now becoming accepted knowledge that the prison experience does not have the expected specific deterrent effect on future criminal behavior, little research has been conducted on what exactly occurs during the offenders' time behind bars that makes this a criminogenic experience. Consequently, researchers need to begin to examine the "black box" of imprisonment to explain its iatrogenic effect on crime (Bonta and Gendreau, 1990; Gendreau and Keyes, 2001). In particular, scholars need to uncover what exactly is it about serving time in prison that makes offenders worse than when they entered the institution's gates.

As suggested by Gendreau et al. (1999), one place to start would be to have prison administrators continually assess the situational factors (e.g., inmate turnover, prison crowding) of the prison environment and how those impact the offenders' adjustment and subsequent criminal behavior. Also, prison administrators could examine those variables from the various criminological theories that predict an increase in criminal behavior. These variables include social learning, association with antisocial peers, severing of social bonds, strains and coercive conditions placed upon the offender, and exposure to deviant subcultures. If the reasons for why prisons are producing a criminogenic effect are pinpointed, then those conditions could be addressed and potentially result in prisons leading to a reduction rather than having no effect or increasing in post-release criminal behavior.

Conditions of Confinement

Out of the 85 studies eligible for inclusion in this meta-analysis, only 11 studies examined the impact of the conditions of confinement on subsequent recidivism. However, each of these studies only included a very elementary measure of the prison conditions offenders were

exposed to, institutional security level, which was a major limitation of this analysis. Although this measure can give insight into the level of surveillance that the inmate may be subjected to, it does not give much more information. Thus, one cannot determine other characteristics of the prison environment that would be more relevant in distinguishing harsh versus less harsh prison environments.

One manner in which to more precisely measure this impact is to create an assessment tool similar to Wright's (1985, 1993) Prison Environment Inventory (PEI). The PEI examines the privacy, safety, structure, support, freedom, emotional feedback, activity, and social stimulation an inmate perceives while incarcerated. Thus, even if an offender was placed in a high security institution, it may be possible that the inmate is actually placed in a less harsh environment on these dimensions than one placed in a lower security institution. In order to more precisely determine the impact of conditions on recidivism, more precise measure of prison conditions must be developed.

Prisons Around the World

Although many international studies were included in this dissertation, to be deemed eligible for inclusion, the findings must have been reported in English. Thus, it is possible that many studies from non-English speaking countries are missing from this analysis. Additionally, all the studies included were from Western industrialized nations. Consequently, the findings of this dissertation, as well as those from the prior reviews of the research, should only be generalized to other Western industrialized counties.

It would be an interesting endeavor to uncover if the sanctions imposed in non-Western industrialized countries have different impacts on recidivism than those imposed in the United States and other English-speaking countries. Many Eastern and Middle Eastern countries are

known for their severe crime control policies, ranging from caning/lashings, to stoning, to hard labor camps. These types of sentences may have greater deterrent effects as they are substantially more severe than the punishments that are able to constitutionally be imposed in this country. Consequently, it would be worthwhile to examine how the results would change if these types of sanctions, as opposed the traditional community correctional sanctions imposed in the United States, were compared to imprisonment in these non-English speaking countries. Thus, future research should seek to find more studies conducted in non-Western industrialized countries to include in subsequent meta-analyses.

More Research on Moderating Variables

As explained in Chapter III, the effects of many moderating variables could not be examined in this study, which was a major limitation. However, this was a result of the substantial amount of missing data found in the primary research studies included in the metaanalysis. Even basic factors such as criminal history, a history of substance abuse or mental illness, and the race of the offenders included in the sample were often found to not be reported in the primary research studies. As a result, it becomes impossible for those who are attempting to synthesize the existing research to analyze potentially important variables as moderators in their analyses.

As a response to this criticism, future scholars should be diligent in collecting as much data as possible on various sample demographics, such as age, sex, education level, marital status, and race, of the sample they are researching. Similarly, researchers should attempt to collect information on the type of offenders included in the sample (e.g., violent, property, sex, etc.) and their criminal history as these factors having been shown to have a relationship with subsequent recidivism (Beck and Shipley, 1989; Langan and Levin, 2002; Sabol et al., 2000).

Additionally, scholars should make a special effort to collect information on the risk-level of offenders as the existing research has shown that intensive interventions can be highly detrimental to low-risk offenders (Andrews, Zinger, et al., 1990; Cullen and Jonson, in press-b; Dowden and Andrews, 1999; 2000; Latessa, Cullen, and Gendreau, 2002; Lipsey and Cullen, 2007; Smith, 2006; Smith et al., 2009). Only when primary studies collect and record more precise data can it be truly uncovered who benefits and who is harmed by the prison experience (Smith et al., 2002).

Further, more research with stronger methodological designs should be conducted. Although there were no significant moderating effects concerning methodological quality in any of the analyses, the findings were still suggestive. For example, in the non-custodial versus custodial sanctions analyses, studies with stronger methodological designs produced less pronounced criminogenic effects than those with weaker designs. Nonetheless, regardless of the methodological quality, every mean effect size was negative, indicating no specific deterrent effect of custodial sanctions. Thus, it is consistent across methodological quality that custodial sanctions are not having a specific deterrent effect; however, more sound research is needed to determine the true magnitude of that effect since there is variation in the size of the estimate across research design categories.

Similarly, although methodological quality was not a significant moderator in the length of incarceration analyses, it suggested an interesting avenue for future research. When examining the mean effect sizes across the four categories of methodological quality, it is apparent that stronger research designs are associated with negative mean effect sizes, showing a criminogenic effect of longer sentences. Conversely, weaker research designs produced positive mean effect sizes indicating a specific deterrent effect of longer sentence lengths. Even more

telling, the only mean effect size to reach statistical significance was the negative mean effect size associated with nonrandomized designs with strong initial equivalence between the groups. Although the analyses showed that the mean effect sizes across the four categories were not significantly different from one another, this still has implications. Specifically, future studies should employ strong research designs in order to determine the true impact of sentence length on post-release offending. It may be possible that the specific deterrent effect found for longer sentences will be reduced when more methodologically sound primary studies are included in future meta-analyses.

Finally, future research should be conducted on specific types of offenders. As the moderating analyses show, for both the non-custodial and custodial sanction and sentence length analyses, significant moderating effects were found for type of offender. First, in the non-custodial versus custodial sanction comparison, samples that combined all types of offenders produced a significant, negative mean effect size, indicating a criminogenic effect of custodial sanctions. However, this effect was significantly different than those produced by studies focusing only on DUI offenders (r = .00) and other offenders (r = .00). Both of these mean effect sizes suggest that there is no effect of custodial sanctions on recidivism. Additionally, both of the confidence intervals for these mean effect sizes include zero, meaning that neither were statistically significant. However, the fact that there was variation among different types of offenders suggests that future research should continue to address the differential impact of custodial sanctions for various types of criminals.

Similarly, significant moderating effects were found for type of offender in the length of incarceration analyses. Specifically, statistically different mean effect sizes were found for samples with all types of offenders combined and samples of exclusively sex offenders. A

negative mean effect size (r = -.03) was produced from studies examining all offenders, while a significant, positive mean effect size was calculated from samples of sex offenders (r = .09). This indicates that longer sentences were associated with greater recidivism for all types of offenders, but had a specific deterrent effect for sex offenders. Thus, this suggests that length of incarceration has a differential impact depending on the type of offender sentenced. However, as can be seen in Table 3.12, almost 80 percent of the effect sizes were calculated from samples that combined all types of offenders; only 20 percent of the effect sizes examined a specific type of offender. Consequently, future research should examine the differential impact of sentence length among different types of offenders in order to determine if this finding holds when more effect sizes are included in the analyses.

CONCLUSION

The United States has embraced a commitment to mass incarceration for the last 40 years that has focused on the punishment and incapacitation of individuals in an attempt to solve the crime problem. Although the use of prisons has been touted as one of the main ways to reduce the criminal behavior of offenders, little evidence has been provided to support the effectiveness of this policy. This dissertation was an attempt to synthesize the empirical research to precisely determine the impact that this reliance on mass incarceration has had on the reoffending behavior of offenders. As was shown, imprisonment is not an effective response to crime if the ultimate goal is to reduce the criminal behavior of offenders. In fact, the use of prisons as one of the main crime control policies in the United States may be contributing to the very problem it is seeking to solve and is doing so at a very high cost of over \$50 billion annually. Thus, the justification that prisons are a mechanism to specifically deter individuals was refuted by these findings. In

this day of accountability, it is time for U.S. policymakers to face the evidence and realize that imprisonment is not achieving what they have promised the American public, a reduction in crime. Consequently, it may be time to end the penal harm movement (Clear, 1994) focused on the punishment and infliction of pain on offenders and begin to embrace a more progressive movement focused on providing offenders with the proper treatment, services, and support to address the factors contributing to their criminal behavior. When this occurs, the correctional system may finally begin to achieve the goal of reducing the criminal behavior of offenders.

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APPENDIX A. Coding Guide

I. STUDY IDENTIFICATION:

A. Identification number:

[StudyID] ____

B. Study accepted or rejected? (yes=1; 0=no)

Note reason why:

C. ELIGIBILITY CRITERIA

	YES	NO
The study evaluated the effects of custodial sanction on recidivism		
and included a comparison group that received a non-custodial		
sanction.		
The study compared the effects a shorter versus longer sentence in a		
custodial sanction.		
The study compared the effects of less harsh versus harsher custodial		
sanctions.		
The study reported a post-conviction measure of criminal behavior,		
such as arrest or conviction. The measure may be based on official		
records or self-reported and may be reported on a dichotomous or		
continuous scale.		
Minimum data are reported to calculate an effect size.		

Notes:

D. Author(s):_____

E. Title:

F. Author affiliation:

- 1 =University
- 2 =State agency
- 3 = Federal agency
- 4 = Mixed
- 5 = Other
- 6 = Missing

[affiliation]

[Included] _____

.

- 1 = Criminal Justice/Criminology
- 2 = Psychology
- 3 =Sociology
- 4 =Social Work
- 5 = Mixed
- 6 = Other
- 7 = Missing
- H. Coder initials:

I. Name of funding agent: _____

- Type of funding agent:
 - 1 = Unfunded
 - 2 =Agency funded
 - 3 = State funded
 - 4 = Federally funded
 - 5 = Other _____
 - 6 = Missing

J. Involvement of the evaluator? (1=yes; 0=no)

K. Publication year:

- **Decade:** 1 = 1960 2 = 1970
- 2 = 19703 = 1980
- 3 = 19804 = 1990
- 4 = 19905 = 2000

L. Geographic location of study:

- 1 = USA
- 2 = Canada
- 3 = England
- 4 = Australia
- 5 =New Zealand
- 6 = Other
- 7 = Missing

[involve] _____

[funding]

[pubyear] _____ [pubdecade] _____

[Geolocation] _____

[discipline]
M. The project was executed/data were gathered (year):	[start]
	[finish]
Decade data gathered:	[decadegath]
1 = 1960	
2 = 1970	
3 = 1980	
4 = 1990	
5 = 2000	
6 = Missing	
N. Publication type:	[pubtype]
1 = Book	
2 = Book chapter	
3 = Federal report	
4 = State or local report	
5 = Conference paper	
6 = Journal	
7 = Thesis/Dissertation	
8 = Other	
O. Number of different groups compared in this report:	[mods]
P. Is the same control/comparison group used in different contras no=0)	ts? (yes=1; [same_cg]
Q. Is this a study comparing non-custodial and custodial sanction no=0)	s? (yes=1; [purpose1]
R. Is this study comparing sentencing lengths? (yes=1; no=0)	[purpose2]

S. Is this study comparing the conditions of confinement? (yes=1; no=0) [purpose3] _____

II. SAMPLE DEMOGRAPHICS:

A. CURRENT OFFENSE: Is the study limited to a certain type off offenders: (yes=1; no=0) [typoff0] _____ 1 = Drug offenses2 =Sexual offenses 3 = Violent offenses 4 = Property offenses 5 = DUI offenses6 =Domestic violence offenses 7 = Other (specify) IF NOT LIMITED TO A SINGLE TYPE OF OFFENDER:

Percent drug offenders for the whole sample [drugnocust] _____ Custodial [drugcust] ____ Percent drug in non-custodial Percent drug in shorter length [drugshort] _____ Longer [druglong] _____ [drugless] _____ Harsher [drugharsh] ____ Percent drug in less harsh condit

Percent sexual offenders for the whole sample

Percent sexual in non-custodial	[sexualnocust]	Custodial [sexualcust]
Percent sexual in shorter length	[sexualshort]	Longer [sexuallong]
Percent sexual in less harsh condit	[sexualless]	Harsher [sexualharsh]

Percent violent offenders for the whole sample

[violnocust] _____Custodial [violcust] _____ Percent violent in non-custodial [violshort] ____ Longer [viollong] ____ Percent violent in shorter length [violless] _____ Harsher [violharsh] _____ Percent violent in less harsh condit

Percent property offenders for the whole sample [propsamp] ____ [propnocust] _____Custodial [propcust] _____ Percent property in non-custodial

[propshort] ____ Longer [proplong] _____ Percent property in shorter length Percent property in less harsh condit [propless] _____ Harsher [propharsh] _____

[drugsamp] ____

[which type1] ____

[which type2] ____

[sexualsamp] _____

[violsamp]

Percent DUI offenders for the whole samp	ole	[DUI samp]
Percent DUI in non-custodial Percent DUI in shorter length Percent DUI in less harsh condit	[DUInocust] [DUIshort] [DUIless]	_Custodial [DUIcust] Longer [DUIong] Harsher [DUIharsh]
Percent domestic violence offenders for th	e whole sample	[DV samp]
Percent DV in non-custodial Percent DV in shorter length Percent DV in less harsh condit	[DVnocust] [DVshort] [DVless]	Custodial [DVcust] Longer [DVlong] Harsher [DVharsh]
Percent other offenders for the whole same	ple	[othoffsamp]
Percent other offenders in non-custo Percent other offenders in shorter ler Percent other offenders in less harsh	dial[othoffnocust] _ ngth[othoffshort] condit [othoffless]	Custodial [othoffcust] Longer [othofflong] Harsher [othoffharsh]
B. AGE: Offenders are: 1 = Exclusively adults 2 = Exclusively juveniles 3 = Mainly adults (over 80%) 4 = Mainly juveniles (over 80%) 5 = Mixed group 6 = Missing		[age]
Mean age for whole sample		[age samp]
Mean age in non-custodial Mean age in shorter length Mean age in less harsh condition	[age noncust] [age short] [age less]	Custodial [age cust] _ Longer [age long] Harsher [ageharsh]
C. SEX:		
Offenders are: 1 = Exclusively males 2 = Exclusively females 3 = Mainly males (over 80%) 4 = Mainly females (over 80%) 5 = Mixed group 6 = Missing		[gender]

Percent of males for whole sample	[malesamp]
Percent males in non-custodial [malen]	oncust] Custodial [malecust]
Percent males in less barsh condition [males	nortj Longer [malelong]
D. RISK:	
Risk level of offenders:	[risk]
I = Low	
2 = Moderate (midpoint on scale)	
3 = High	
4 = Mixed	
5 = Cannot tell - not reported	
Percent high risk for whole sample	[highsamp]
Percent high risk in non-custodial [highn	oncust] Custodial [highcust]
Percent high risk in shorter length [highs]	nort] Longer [highlong]
Percent high risk in less harsh condit [highle	ss] Harsher [highharsh]
Percent moderate risk for whole sample	[modsamp]
Percent mod risk in non-custodial [modn	oncust] Custodial [modcust]
Percent mod risk in shorter length [mods]	nort] Longer [modlong]
Percent mod risk in less harsh condit [modle	ss] Harsher [modharsh]
Percent low risk for whole sample	[lowsamp]
Percent low risk in non-custodial [lowno	ncust] Custodial [lowcust]
Percent low risk in shorter length [lowsho	ort] Longer [lowlong]
Percent low risk in less harsh condit [lowles	s Harsher [lowharsh]
	-]
Measurement of Risk:	[risk_meas]
I = Use valid psychometric	
$2 = Uses recidivism \frac{1}{2}$	a suther defined
3 = 0 ses demographic information, < 2 prior	s – author defined
4 - 0 ses demographic information, < 2 prior $5 - Connect tall - net reported$	s – coder defined
5 – Cannot ten – not reported	
Name of Risk Instrument Used:	

E. MARITAL STATUS:

Percent married for whole sam	ıple	[marrysamp]
Percent married in non-custodial Percent married in shorter length Percent married in less harsh con	[marrynoncust [marryshort] ndit [marryless]	t] Custodial [marrycust] Longer [marrylong] Harsher [marryharsh]
F. EMPLOYMENT:		
Percent unemployed for whole	sample	[unempsamp]
Percent unemployed in non-custo Percent unemployed in shorter le Percent unemployed in less harsh	odial [unempnoncu :ngth [uempshort] _ h condit [unempless	st] Custodial [unempcust] Longer [unemplong] s] Harsher [unempharsh]
G. EDUCATION:		
Percent with at least a HS diple	oma or GED for wh	ole sample [edusamp]
Percent HS/GED in non-custodia Percent HS/GED in shorter lengt Percent HS/GED in less harsh co	al [edunoncust] h [edushort] ondit [eduless]	Custodial [educust] Longer [edulong] Harsher [eduharsh]
H. RACE:		
Percent black for whole sample	e	[blacksamp]
Percent black in non-custodial[bl Percent black in shorter length [k Percent black in less harsh condit	lacknoncust] ɔlackshort] t [blackless]	Custodial[blackcust] Longer[blacklong] Harsher[blackharsh]
Percent white for whole sample	e	[whitesamp]
Percent white in non-custodial[w Percent white in shorter length [w Percent white in less harsh condi	hitenoncust] whiteshort] t [whiteless]	Custodial[whitecust] Longer[whitelong] Harsher[whiteharsh]

	Percent Hispanic for whole sample	[Hispsamp]
	Percent Hispanic in non-custodial[Hispnoncust] Percent Hispanic in shorter length [Hispshort] Percent Hispanic in less harsh condit [Hispless]	Custodial[Hispcust] Longer[Hisplong] Harsher[Hispharsh]
	Percent other for whole sample	[othersamp]
	Percent other in non-custodial[othernoncust] Percent other in shorter length [othershort] Percent other in less harsh condit [otherless]	Custodial[othercust] Longer[otherlong] Harsher[otherharsh]
I. CR	IMINAL HISTORY:	
	Mean age at first detention for whole sample	[dentage]
	Mean age 1 st detention in non-custodial[dentnoncus Mean age 1 st detention in shorter length [dentshort] Mean age 1 st detention less harsh condit [dentless]	it] Custodial[dentcust] Longer[dentlong] Harsher[dentharsh]
	Percent of whole sample with a prior record	[priorsamp]
	Percent w prior record in non-custodial[priornoncu Percent w prior record in shorter length [priorshort] Percent w prior record less harsh condit [priorless]	st]Custodial[priorcust]]Longer[priorlong] Harsher[priorharsh]
	Mean number of prior offenses for whole sample	[prinumsamp]
	Mean prior record in non-custodial[prinumnoncust Mean prior record in shorter length [prinumshort] Mean prior record less harsh condit [prinumless]]Custodial[prinumcust] Longer[prinumlong] Harsher[prinumharsh]
	Percent of whole sample with a prior incarceration	on [incarsamp]
	Percent prior incarceration in non-custodial[incarno Percent prior incarceration in shorter length [incars] Percent prior incarceration less harsh condit [incarle	ncust]Custodial[incarcust] nort]Longer[incarlong] ess]Harsher[incarharsh]

Mean number of prior incarcerations for whole sample	[princsamp]
Mean prior incarceration in non-custodial[princnoncust]_	Custodial[princcust]
Mean prior incarceration in shorter length [princsnort]	Longer[princlong]
mean prior incarceration less harsh condit [princless]	
Percent prior drug offenders for the whole sample	[pdrugsamp]
Percent prior drug in non-custodial [pdrugnocust]	_ Custodial [pdrugcust]
Percent prior drug in shorter length [pdrugshort]	Longer [pdruglong]
Percent prior drug in less harsh condit[pdrugless]	Harsher [pdrugharsh]
Percent prior sexual offenders for the whole sample	[psexualsamp]
Percent prior sexual in non-custodial [psexualnocust]	_Custodial [psexualcust]
Percent prior sexual in shorter length [psexualshort]	Longer [psexuallong]
Percent prior sexual in less harsh condit[psexualless]	Harsher [sexualharsh]
Percent prior violent offenders for the whole sample	[pviolsamp]
Percent prior violent in non-custodial [pviolnocust]	Custodial [pviolcust]
Percent prior violent in shorter length [pviolshort]	Longer [pviollong]
Percent prior violent in less harsh condit[pviolless]	Harsher [pviolharsh]
Percent prior property offenders for the whole sample	[ppropsamp]
Percent prior property in non-custodial [ppropnocust]	Custodial [ppropcust]
Percent prior property in shorter length [ppropshort]	_ Longer [pproplong]
Percent prior property in less harsh condit[ppropless]	_ Harsher [ppropharsh]
Percent prior DUI offenders for the whole sample	[pDUIsamp]
Percent prior DUI in non-custodial [pDUInocust]C	ustodial [pDUIcust]
Percent prior DUI in shorter length [pDUIshort]	Longer [pDUIlong]
Percent prior DUI in less harsh condit [pDUIless]	Harsher [pDUIharsh]

Percent prior DV offenders for the	e whole sample	[pDVsamp]
Percent prior DV in non-custodial [Percent prior DV in shorter length Percent prior DV in less harsh condi	pDVnocust]([pDVshort] it [pDVless]	Custodial [pDVcust] Longer [pDVlong] Harsher [pDVharsh]
Percent prior other offenders for	the whole sample	[pothoffsamp]
Percent prior other offense non-cust Percent prior other offense shorter le Percent prior other offense in less ha	odial [pothoffnocus ength [pothoffshort] arsh [pothoffless] _	t]Custodial [pothoffcust] Longer [othofflong] Harsher[pothoffharsh]
J. SUBSTANCE ABUSE:		
Percent with substance abuse pro	blems for whole san	nple [sasamp]
Percent SA in non-custodial Percent SA in shorter length Percent SA in less harsh condit	[sanocust] [sashort] [saless]	Custodial [sacust] Longer [salong] Harsher [saharsh]
K. MENTAL HEALTH:		
Percent with mental health proble	ems for whole samp	le [mhsamp]

 Percent w mental health prob in non-custodial [mhnocust]
 _____Custodial [sacust]

 Percent w mental health prob in shorter length [mhshort]
 _____Longer [mhlong]

 Percent w mental health prob in less harsh condit [mhless]
 _____Harsher [mhharsh]

L. TREATMENT:

Was the non-custodial sanction coupled with any treatment? (1=yes; 0=no)	[Treatnon]
Was the custodial sanction coupled with any treatment?	
(1=yes; 0=no)	[Treatcust]
 a. Length of treatment in non-custodial sanction. b. Type of treatment in non-custodial sanction. 	[Treatnontime] [Treattypenon]
2 = Group	
3 = Individual	
4 = Mixed	
5 = Unknown	
6 = Missing	
c. Length of treatment in custodial sanction.	[Treatcusttime]
d. Type of treatment in custodial sanction.	[Treattypecust]
1 = CBT	
2 = Group	
3 = Individual	
4 = Mixed	
5 = Unknown	

III. CONTENT OF COMPARED SANCTI A. Executed Sanction(s):

|--|

		,
	1.a	
	1.b	
	1.c	
	Mean length in non-custodial sanction: (months)	[timenoncust
- Custo	odial sanction(s):	
	2.a	
	2.b	
	2.c	
	Mean length in custodial sanction: (months)	[timecust]
otos.	2	

B. Sentence length

-Shorter sentence (months)

-Longer sentence (months)

C. Conditions of confinement

- Less harsh - describe

- More harsh – describe

IV. METHODOLOGICAL RIGOR ASSESSMENT

A. Variables used for MATCHING STUDIES

YES/NO a. Age Is age matched within one year? b. Gender c. Marital status d. Education, employment and/or economic status e. Ethnic background and national origin f. Current conviction offense Drug offense Sexual offense Violent offense **Property offense DUI offense** Domestic violence offense Other offense g. Criminal history Age at first detention Prior record Drug related charges Type of offense (seriousness) h. Substance abuse i. Mental health j. Other (specify)

[shorttime] _____

B. Variables used for statistical control

	(dichotomous/ dummy=1; continuous=2)
a. Age	
Is age matched within one year?	
b. Gender	
c. Marital status	
d. Education, employment and/or economic status	
e. Ethnic background and national origin	
f. Current conviction offense	
Drug offense	
Sexual offense	
Violent offense	
Property offense	
DUI offense	
Domestic violence offense	
Other offense	
g. Criminal history	
Age at first detention	
Prior record	
Drug related charges	
Type of offense (seriousness)	
h. Substance abuse	
i. Mental health	
j. Other (specify)	

YES/NO

How measured

Notes:_____

C. Rating of initial group similarity:

- 4 = Randomized design, large N or small N with matching
- 3 = Nonrandomized design with strong evidence of initial equivalence
- 2 = Nonrandomized design, comparison groups have acknowledged differences
- 1 = Nonrandomized design, comparison group highly likely to be different
- or known differences that are related to future recidivism [simRate]_____

D. Attrition has been a problem? (yes=1; no=0; 2=missing)	[Attrit]
Note: no more than 20 percent dropped out in each gro	up

E. Is a control group (meaning an experimental study of whatsoever) used? (yes=1; no=0)	r the group rec 	ceived no treatment [control]
F. Is a comparison group (meaning the group received s	ome other trea	atment) used? [compare]
V. SIZE AND COMPOSITION OF THE SAMPLE		
A. SIZE:		
Non-custodial/short/less harsh sanction group(s) (different spaces in case different non-custodial groups – make sure to specify the group composition)	1.a Subjects 1.b Subjects 1.c Subjects	[size1a] [size1b] [size1c]
Custodial/longer/harsher sanction group(s) (different spaces in case different non-custodial groups – make sure to specify the group composition)	2.a Subjects2.b Subjects2.c Subjects	[size2a] [size2b] [size2c]

VI. OUTCOME INFORMATION

A. Recidivism construct represented by this measure: (yes=1; no=0)	
1. Arrest/charged by police	[mea1]
2. Conviction	[mea2]
3. Reinstitutionalization /reincarceration	[mea3]
4. Parole/technical violations	[mea4]
5. Contact with court	[mea5]
6. Mixed	[mea6]
7. Other indicator of criminal involvement:	[mea7]
Notes:	

B. Technical violations had been an outcome: (yes=1; no=0)	[techviol]
How were they treated?	[techtreat]
$1 - \alpha w n$ category	

- 1 =own category
- 2 = Mixed with other criminal offenses
- 3 = Mixed with criminal offenses when resulting in a revocation of probation/parole
- 4 = Treated as attrition cases
- 5 = Missing

C. Specify types of offenses included in recidivism measure: (yes=1; no=0)

1. All offenses	[meaoff1]
2. Drug offenses	[meaoff2]
3. Person offenses, sexual	[meaoff3]
4. Person offenses, nonsexual	[meaoff4]
5. Property offenses	[meaoff5]
6. DUI offenses	[meaoff6]
7. Domestic violence offenses	[meaoff7]
7. Other (specify):	[meaoff8]

D. Type of measurement scale: (yes=1; no=0)

1. Dichotomy	[scale1]
2. Tricotomy	[scale2]
3. Four or more discrete ordinal categories	[scale3]
4. Count Measure	[scale4]
5. Survival measure	[scale5]

E. Source of data: (yes=1; no=0)

1. Self report	[source1]
2. Official record	[source2]
3. Other (specify):	[source3]
4. Cannot tell	[source4]

F. Length of follow-up period (months):

1. Minimum	[length1]
2. Maximum	[length2]
3. Mean	[length3]
4. Fixed (same for all subjects)	[length4]
G. On post-release supervision (1=yes; 0=no)	[postsup]

VII. EFFECT SIZE DATA

A. Means and standard deviation (recidivism)

1. Non-custodial sanction group mean[ESmeannon] _____2. Custodial sanction group mean[ESmeancust] _____3. Non-custodial sanction group standard deviation[ESstdevnon] _____4. Custodial sanction group standard deviation[ESstdevcust] _____

	 Shorter length sanction group mean Longer length sanction group mean Shorter length group standard deviation Longer length group standard deviation 	[ESmeanshort] [ESmeanlong] [ESstdevshort] [ESstdevlong[
Note: _	 Less harsh sanction group mean More harsh sanction group mean Less harsh sanction group standard deviation More harsh sanction group standard deviation 	[ESmeanless] [ESmeanmore] [ESstdevless] [ESstdevmore]
B. Proj	portion (recidivism)	
	Proportion of non custodial sanction group that recidivated/short le	ngth/less harsh [ES_prop1]
	Proportion of custodial sanction group that recidivated/long length	/more harsh [ES_prop2]
C. Sur	vival	
	Mean survival time of the non-custodial sanction group/short lengt Mean survival time of the custodial sanction group/long length/mo	h/less harsh [ES_surv1] re harsh [ES_surv2]
D. Odd	ls ratio (logistic regression) not being arrested/being arrested	
	Calculated for the non-custodial sanction group/short length/less has Calculated for the custodial sanction group /long length/more harsh	arsh [ES_odds1]] [ES_odds2]
E. Inci	dence rate (recidivism)	
	Incidence rate of non-custodial sanction group (mean) /short length Incidence rate of custodial sanction group (mean) /long length/mor	n/less harsh [ES_inc1] e harsh [ES_inc2]

219

F. Mean change (recidivism) Mean change for the non-custodial sanction group/short length/less harsh

[ES change1] Mean change for the custodial sanction group/long length/more harsh [ES change2] G. Use of statistical significance test (yes=1; no=0)

H. Direction of predictor

- 1 = equal recidivism rates
- 2 =experimental (custodial, longer, harsher) > control (non-custodial, shorter, less harsh)
- 3 = experimental (custodial, longer, harsher) < control (non-custodial, shorter, less harsh)

I. Type of statistical test

- 1 = t-test
- 2 = F-test
- 3 = Chi square
- 4 = OLS regression
- 5 = WLS regression
- 6 = LISERAL/path analysis
- 7 = ARIMA/time series
- 8 = Nonlinear models
- 9 = Stepwise regression
- 10 = Odds ratio
- 11 = Incidence rate
- 12 = Mean change
- 13 = Descriptive statistics
- 14 = Other

J. Calculated Effect Size

[ESSIZE]

[ES_test] _____

[SigTest] ____

[Es dir]

Author	r	Ν
Adkins, Huff, and Stageberg (2000)	27	232
Adkins, Huff, and Stageberg (2000)	16	232
Adkins, Huff, and Stageberg (2000)	04	201
Adkins, Huff, and Stageberg (2000)	03	201
Annan, Martin, & Forst (1986)	.03	266
Babst & Mannering (1965)	06	7,544
Babst & Mannering (1965)	08	7,821
Barton & Butts (1990)	.01	486
Bonta, Wallace-Capretta, & Rooney (1998)	32	142
Bonta, Wallace-Capretta, & Rooney (2000a)	12	502
Bonta, Wallace-Capretta, & Rooney (2000a)	05	270
Bonta, Wallace-Capretta, & Rooney (2000b)	.05	117
Bonta, Wallace-Capretta, & Rooney (2000b)	.01	154
Boudouris & Turnbull (1985)	.02	886
Boudouris & Turnbull (1985)	.23	886
Boudouris & Turnbull (1985)	10	156
Boudouris & Turnbull (1985)	01	156
Brown & Ruddy (2008)	13	2,221
Brownlee (1995)	.05	90
Brownlee (1995)	09	66
Burns and Vito (1995)	.04	274
Burns and Vito (1995)	.10	170
Calhoun, Etheridge, Flinchum, Gallagher, Hevener, & Katzenelson (2009)	11	4,871
Calhoun, Etheridge, Flinchum, Gallagher, Hevener, Lagos & Katzenelson (2010)	20	46,348
Calhoun, Etheridge, Flinchum, Gallagher, Hevener, Lagos & Katzenelson (2010)	.10	30,168
Calhoun, Etheridge, Flinchum, Gallagher, Hevener, Lagos & Katzenelson (2010)	13	30,565
Calhoun, Etheridge, Flinchum, Gallagher, Hevener, Lagos & Katzenelson (2010)	.16	14,476
Calhoun, Etheridge, Flinchum, Gallagher, Katzenelson, & Moore-Gurrera (2008)	21	43,682
Calhoun, Etheridge, Flinchum, Gallagher, Katzenelson, & Moore-Gurrera (2008)	.09	27,126
Calhoun, Etheridge, Flinchum, Gallagher, Katzenelson, & Moore-Gurrera (2008)	15	29.857
Calhoun, Etheridge, Flinchum, Gallagher, Katzenelson, & Moore-Gurrera (2008)	.14	13,301
Connecticut Department of Corrections (2001)	15	14,408
Connecticut Department of Corrections (2001)	18	14,408
Connecticut Office of Policy and Management (2010)	03	38,507
Deyoung (1997)	01	36,160
Deyoung (1997)	01	45,004
Ebron, Hevener, Etheridge, Jones, Katzenelson (2004)	25	42,463
Ebron, Hevener, Etheridge, Jones, Katzenelson (2004)	.06	23,902
Ebron, Hevener, Etheridge, Jones, Katzenelson (2004)	24	34,336
Ebron, Hevener, Etheridge, Jones, Katzenelson (2004)	.08	15,775
Erwin (1986)	07	297
Erwin (1986)	01	297
Flinchum, Hevener, Etheridge, Jones, Katzenelson, and Moore-Gurrera (2006)	23	45,020
Flinchum, Hevener, Etheridge, Jones, Katzenelson, and Moore-Gurrera (2006)	.09	27,093
Flinchum, Hevener, Etheridge, Jones, Katzenelson, and Moore-Gurrera (2006)	17	30,880
Finchum, Hevener, Etheridge, Jones, Katzenelson, and Moore-Gurrera (2006)	.15	12,953
Gerken & Hayes (1993)	.11	4,487
Gordon & Glaser (1991)	21	272
Gordon & Glaser (1991)	18	552
GottIredson & Barton (1993)	.19	572

Appendix B. Listing of Study Author, Year, Effect Size, and Sample N for Custodial versu Non-custodial Comparisons

Holley & Wright (1994)	03	1,549
Holley & Wright (1994)	21	1,346
Jolin & Stipak (1992)	.14	160
Jolin & Stipak (1992)	02	194
Jones & Ross (1997a)	.23	640
Jones & Ross (1997a)	.23	640
Jones & Ross (1997b)	19	700
Jones (1991)	11	581
Justice Education Center (1996)	08	1,233
Justice Education Center (1996)	08	697
Justice Education Center (1996)	.09	633
Justice Education Center (1996)	.14	712
Justice Education Center (1996)	12	878
Justice Education Center (1996)	12	342
Justice Education Center (1996)	.05	278
Justice Education Center (1996)	02	357
Justice Education Center (1996)	01	862
Justice Education Center (1996)	01	326
Justice Education Center (1996)	.16	262
Justice Education Center (1996)	.09	241
Killias, Aebi, & Ribeaud (2000)	05	107
Krantz & Lindsten (2002)	23	13,028
Krantz & Lindsten (2002)	23	12,393
Krantz & Lindsten (2002)	15	10,087
Krantz & Lindsten (2002)	22	9,799
Krantz & Lindsten (2002)	28	4,475
Krantz & Lindsten (2002)	50	3,840
Krantz & Lindsten (2002)	14	1,534
Krantz & Lindsten (2002)	27	1,246
Krantz & Lindsten (2002)	43	13,297
Krantz & Lindsten (2002)	52	12,746
Krantz & Lindsten (2002)	42	9,929
Krantz & Lindsten (2002)	34	9,442
Krantz & Lindsten (2002)	30	4,755
Krantz & Lindsten (2002)	54	4,204
Krantz & Lindsten (2002)	19	1,387
Krantz & Lindsten (2002)	32	900
Krantz & Lindsten (2002)	15	18,194
Krantz & Lindsten (2002)	14	17,677
Krantz & Lindsten (2002)	20	16,121
Krantz & Lindsten (2002)	24	12,933
Krantz & Lindsten (2002)	27	13,590
Krantz & Lindsten (2002)	13	14,530
Krantz & Lindsten (2002)	13	14,061
Krantz & Lindsten (2002)	26	13,379
Krantz & Lindsten (2002)	12	14,164
Krantz & Lindsten (2002)	19	13,576
Krantz & Lindsten (2002)	27	12,408
Krantz & Lindsten (2002)	14	13,155
Krantz & Lindsten (2002)	15	12,551
Krantz & Lindsten (2002)	36	12,503
Krantz & Lindsten (2002)	20	9,827
Krantz & Lindsten (2002)	24	9,353
Krantz & Lindsten (2002)	25	4,965
Krantz & Lindsten (2002)	29	5,168
Krantz & Lindsten (2002)	35	4,497

Krantz & Lindsten (2002)	31	4,452
Krantz & Lindsten (2002)	34	361
Krantz & Lindsten (2002)	21	1,301
Krantz & Lindsten (2002)	21	832
Krantz & Lindsten (2002)	43	870
Krantz & Lindsten (2002)	26	1,655
Krantz & Lindsten (2002)	34	1,067
Krantz & Lindsten (2002)	47	784
Krantz & Lindsten (2002)	29	1,531
Krantz & Lindsten (2002)	30	927
Krantz & Lindsten (2002)	55	4,022
Krantz & Lindsten (2002)	26	1,346
Krantz & Lindsten (2002)	32	872
Kraus (1978)	24	180
Kraus (1978)	04	180
Kraus (1981)	.00	50
Kraus (1981)	13	50
Kraus (1981)	11	114
Lloyd, Mair, and Hough (1994)	11	12,063
Lloyd, Mair, and Hough (1994)	11	12,009
Lloyd, Mair, and Hough (1994)	05	12,969
MacKenzie (1991)	.03	114
MacKenzie (1991)	13	114
MacKenzie & Shaw (1993)	.06	251
MacKenzie & Shaw (1993)	02	251
MacKenzie & Shaw (1993)	.18	210
MacKenzie & Shaw (1993)	.19	225
MacKenzie & Shaw (1993)	04	1.491
MacKenzie & Shaw (1993)	06	2.238
Mbuba (2004)	.04	2,210
Mbuba (2004)	.01	8,670
McMullen (2006)	09	476
Muiluvuori (2001)	11	476
Office of the Legislative Auditor (1997)	- 24	8 670
Pease. Billingham, & Earnshaw (1977)	22	14
Pease Billingham & Earnshaw (1977)	.22	16
Pease Billingham & Farnshaw (1977)	- 25	26
Pease Billingham & Farnshaw (1977)	- 03	37
Pease Billingham & Farnshaw (1977)	33	5
Pease Billingham & Farnshaw (1977)	- 08	13
Peace Billingham & Earnshaw (1977)	.00	68
Peace Billingham & Earnshaw (1977)	.25	220
Peace Billingham & Earnshaw (1977)	- 09	102
Peace Billingham & Earnshaw (1977)	09	102
Peace Billingham & Earnshaw (1977)	.12	33
Peace Billingham & Earnshaw (1977)	.00	112
Petercilia & Turner with Deterson (1986)	.11	1 0 2 2
Pogger (1004)	11	215
Roeger (1994)	20	129
Roeger (1994)	27	130
Nucger (1994) Deseger (1004)	1/	304 227
Rueger (1994)	24	227
Ruuuy (2007) Buddy (2007)	30	20,003
Kuuuy (2007) Seernitti and Stanhanson (1968)	23	20,003
Scarphu and Stephenson (1908)	30	15
Scarpitti and Stephenson (1908)	0/	/6
Scarphu and Stephenson (1908)	26	65

Scarpitti and Stephenson (1968)	.03	65
Schneider (1986)	05	181
Schneider (1986)	02	181
Sheldon (1997)	07	542
Smith (1990)	.08	494
Smith and Akers (1993)	.08	494
Spohn and Holleran (2002)	23	1,077
Vito & Allen (1981)	06	1,523
Weatherburn (1984)	29	1,230
Weisburd & Waring with Chayet (2001)	08	742
Wiebush (1993)	39	163
Wiebush (1993)	.04	157
Winokur, Smith, Bontrager, & Blankenship (2008)	11	16,605
Wright and Mays (1998)	03	1,377
Wright and Mays (1998)	22	1,135

Babst, Moseley, Schmeidler, Neithercutt, & Koval (1976) .08 .629 Babst, Moseley, Schmeidler, Neithercutt, & Koval (1976) .09 .633 Beck & Khoffman (1976) .13 10,278 Beck & Khoffman (1976) .13 11,35 Besches, Turner, & Petersilia (1995) .04 124 Florida Department of Corrections (2003) .21 32,983 Gottfredson, Gottfredson, & Garofalo (1977) .11 .64 Gottfredson, Gottfredson, & Garofalo (1977) .37 19 Gottfredson, Gottfredson, & Garofalo (1977) .05 81 Gottfredson, Gottfredson, & Garofalo (1977) .06 437 Gottfredson, Gottfredson, & Garofalo (1977) .09 580 Gottfredson, Gottfredson, & Garofalo (1977) .08 237 Gottfredson, Gottfredson, & Garofalo (1977) .01 .17 Harer (1994) .01 .147 <td< th=""><th>Author</th><th>r</th><th>Ν</th></td<>	Author	r	Ν
Babst, Moseley, Schmeidler, Neithereutt, & Koval (1976) .09 633 Back, & Shipley (1989) .13 10.278 Beck & Binipey (1989) .13 11.31 Berce & Jaman (1981) .04 1.33 Deschenes, Turner, & Petersilia (1995) .04 124 Florida Department of Corrections (2003) .21 32.983 Gottfredson, Gottfredson, & Garofalo (1977) .15 130 Gottfredson, Gottfredson, & Garofalo (1977) .05 81 Gottfredson, Gottfredson, & Garofalo (1977) .05 81 Gottfredson, Gottfredson, & Garofalo (1977) .09 580 Gottfredson, Gottfredson, & Garofalo (1977) .08 247 Gottfredson, Gottfredson, & Garofalo (1977) .08 244 Gottfredson, Gottfredson, & Garofalo (1977) .08 247 Gottfredson, Gottfredson, & Garofalo (1977) .08 247 Gottfredson, Gottfredson, & Garofalo (1977) .09 121 Harer (1984) .00 .13 1.825 Hotina Department of Corrections (2007) .18 1.18 1.92	Babst Moseley Schmeidler Neithercutt & Koval (1976)	08	629
Beck & Shipley (1989) 13 10,278 Beck & Hoffman (1976) -13 1,136 Bercocchea & Jaman (1981) 04 1,135 Deschenes, Turner, & Petersilia (1995) -04 124 Florida Department of Corrections (2003) 21 32,983 Gottfredson, Gottfredson, & Garofalo (1977) -11 64 Gottfredson, Gottfredson, & Garofalo (1977) -06 437 Gottfredson, Gottfredson, & Garofalo (1977) -06 437 Gottfredson, Gottfredson, & Garofalo (1977) -06 437 Gottfredson, Gottfredson, & Garofalo (1977) -20 95 Gottfredson, Gottfredson, & Garofalo (1977) -88 217 Gottfredson, Gottfredson, & Garofalo (1977) -88 237 Gottfredson, Gottfredson, & Garofalo (1977) -88 237 Gottfredson, Gottfredson, & Garofalo (1977) -08 237 Gottfredson, Gottfredson, & Garofalo (1977) -08 237 Gottfredson, Gottfredson, & Garofalo (1977) -08 237 Gottfredson, Gottfredson, & Garofalo (1977) -01 347 Holare, Hopeth	Babst, Moseley, Schmeidler, Neithercutt, & Koval (1976)	.00	633
Beck & Hoffman (1976) -13 1,136 Berecochea & Jaman (1981) .04 1,135 Deschenes, Tumer, & Petersila (1995) 04 124 Florida Department of Corrections (2003) .21 32,983 Gottfredson, Gottfredson, & Garofalo (1977) .11 644 Gottfredson, Gottfredson, & Garofalo (1977) .5 130 Gottfredson, Gottfredson, & Garofalo (1977) .05 81 Gottfredson, Gottfredson, & Garofalo (1977) .06 437 Gottfredson, Gottfredson, & Garofalo (1977) .09 580 Gottfredson, Gottfredson, & Garofalo (1977) .08 424 Gottfredson, Gottfredson, & Garofalo (1977) .08 424 Gottfredson, Gottfredson, & Garofalo (1977) .09 11 Holland, Pointon, & Ross (2007) .18 1,182 Holland, Pointon, & Ross (2007) .18 1,182 Holland, Pointon, & Ross (2007) .10 1,147 Hoover (2004) .09 40 Horian Department of Corrections (2009a) .13 1,254 Indiana Department of Corrections (2009b) <	Beck & Shipley (1989)	.13	10.278
Berecochea & Jaman (1981) .04 1,135 Deschenes, Turner, & Petersilia (1995) .04 124 Florida Department of Corrections (2003) .21 32,983 Gottfredson, Gottfredson, & Garofalo (1977) .11 64 Gottfredson, Gottfredson, & Garofalo (1977) .37 19 Gottfredson, Gottfredson, & Garofalo (1977) .06 437 Gottfredson, Gottfredson, & Garofalo (1977) .09 580 Gottfredson, Gottfredson, & Garofalo (1977) .08 424 Gottfredson, Gottfredson, & Garofalo (1977) .08 423 Gottfredson, Gottfredson, & Garofalo (1977) .08 424 Gottfredson, Gottfredson, & Garofalo (1977) .08 424 Gottfredson, Gottfredson, & Garofalo (1977) .08 424 Hotins, Burfend, Doyle, Cornad, Price, Kaikkonen, & Soto (2004) .07 29 Hotins, Burfend, Doyle, Cornad, Price, Kaikkonen, & Soto (2004) .07 29 Hover (2001) .18 1,182 1,147 Hover (2005) .13 1,254 Indiana Department of Corrections (2009a) .11 7,977	Beck & Hoffman (1976)	13	1.136
Deschenes, Turner, & Petersilia (1995) -04 124 Florida Department of Corrections (2003) .21 32,983 Gottfredson, Gottfredson, & Garofalo (1977) 11 64 Gottfredson, Gottfredson, & Garofalo (1977) .05 81 Gottfredson, Gottfredson, & Garofalo (1977) .05 81 Gottfredson, Gottfredson, & Garofalo (1977) .06 437 Gottfredson, Gottfredson, & Garofalo (1977) .08 2424 Gottfredson, Gottfredson, & Garofalo (1977) .08 2424 Gottfredson, Gottfredson, & Garofalo (1977) .08 237 Gottfredson, Gottfredson, & Garofalo (1977) .09 121 Harer (1994) .01 .147 .09 Holtand, Poyle, Conrad, Price, Kaikkonen, & Soto (2004) .09 40 Holtand, Doyle, Conrad, Price, Kaikkonen, & Soto (2004) .09 1,23 Hoover (2004) .00 1,243 Hoover (2005) .13 1,254 Indiana Department of Corrections (2009b) .11 8,255 Indiana Department of Corrections (2009b) .11 8,237	Berecochea & Jaman (1981)	.04	1.135
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Gottfredson, Gottfredson, & Garofalo (1977) 09 580 Gottfredson, Gottfredson, & Garofalo (1977) 20 95 Gottfredson, Gottfredson, & Garofalo (1977) 08 4.24 Gottfredson, Gottfredson, & Garofalo (1977) 08 2.37 Gottfredson, Gottfredson, & Garofalo (1977) 08 2.37 Gottfredson, Gottfredson, & Garofalo (1977) .09 121 Harer (1994) 01 3.47 Holland, Pointon, & Ross (2007) .18 1.182 Hollist, Burfeind, Doyle, Conrad, Price, Kaikkonen, & Soto (2004) .07 29 Hoover (2001) .10 1,147 Hoover (2004) .09 1,243 Hoover (2005) .13 1,254 Indiana Department of Corrections (2009b) .11 8,825 Indiana Department of Corrections (2009b) .11 7,977 Jaman, Dickover, & Bennett (1972) .12 240 Jaman, Dickover, & Bennett (1972) .14 150 Kantz & Lindsten (2002) .10 6,434 Kellam and Hayes (2007) .04 6,936 Krantz & Lindsten (2002) .10 1,3	Gottfredson, Gottfredson, & Garofalo (1977)	06	437
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Holland, Pointon, & Ross (2007) .18 1,182 Hollist, Burfeind, Doyle, Conrad, Price, Kaikkonen, & Soto (2004) .07 .29 Hoover (2001) .10 1,147 Hoover (2005) .13 1,254 Indiana Department of Corrections (2009a) .28 961 Indiana Department of Corrections (2009b) .11 8,825 Indiana Department of Corrections (2009b) .11 8,825 Indiana Department of Corrections (2009b) .11 7,977 Jaman, Dickover, & Bennett (1972) .12 240 Jaman, Dickover, & Bennett (1972) .14 150 Kansas Department of Corrections (2009) .17 8,977 Kellam (2006) .01 6,434 Kellam and Hayes (2007) .04 6,936 Krantz & Lindsten (2002) .10 7,147 Krantz & Lindsten (2002) .13 6,555 Krantz & Lindsten (2002) .01 3,506 Kraus (1981) .08 54 Kraus (1981) .03 20 Kraus (1981) .03 23 57 Langan, Schmitt, & Durose (2003) .10 <td>Harer (1994)</td> <td>01</td> <td>347</td>	Harer (1994)	01	347
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Langan, Schmitt, & Durose (2003) .10 1,026 Langan, Schmitt, & Durose (2003) .13 1,971 Matthews & Calia (2009) .15 1,225 Mbuba (2004) 03 1,891 Weatherburn (1984) .03 174 Winokur, Smith, Bontrager, & Blankenship (2008) .04 3,301	Langan, Schmitt, & Durose (2003)	.25	786
Langan, Schmitt, & Durose (2003) .13 1,971 Matthews & Calia (2009) .15 1,225 Mbuba (2004) 03 1,891 Weatherburn (1984) .03 174 Winokur, Smith, Bontrager, & Blankenship (2008) .04 3,301	Langan, Schmitt, & Durose (2003)	10	1 026
Matthews & Calia (2009) .15 1,225 Mbuba (2004) 03 1,891 Weatherburn (1984) .03 174 Winokur, Smith, Bontrager, & Blankenship (2008) .04 3,301	Langan, Schmitt, & Durose (2003)	.13	1,971
Mbuba (2004) 03 1,891 Weatherburn (1984) .03 174 Winokur, Smith, Bontrager, & Blankenship (2008) .04 3,301	Matthews & Calia (2009)	.15	1.225
Weatherburn (1984) .03 174 Winokur, Smith, Bontrager, & Blankenship (2008) .04 3,301	Mbuba (2004)	03	1.891
Winokur, Smith, Bontrager, & Blankenship (2008) .04 3,301	Weatherburn (1984)	.03	174
	Winokur, Smith, Bontrager, & Blankenship (2008)	.04	3,301

Appendix C. Listing of Study Author, Year, Effect Size, and Sample N for Shorter versus Longer Lengths of Incarceration

Author	r	Ν
Florida Department of Corrections (2003)	16	60,254
Florida Department of Corrections (2009)	16	115,284
Hoover (2001)	21	1,485
Hoover (2004)	17	1,182
Hoover (2005)	14	1,254
Kansas Department of Corrections (2009)	21	12,235
Kentucky Department of Corrections (1997)	15	1,439
Kentucky Department of Corrections (1997)	16	1,519
Kentucky Department of Corrections (1997)	12	1,574
Kentucky Department of Corrections (2002)	03	990
Kentucky Department of Corrections (2002)	11	1,174
Matthews & Calia (2009)	16	841
Van Ness (1992)	33	70
Van Ness (1992)	37	70
Winokur, Smith, Bontrager, & Blankenship (2008)	.04	5,555

Appendix D. Listing of Study Author, Year, Effect Size, and Sample N for Less Harsh versus Harsher Conditions of Confinement