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Inmate Misconduct and Victimization: Investigating the Changes Over Time and If the Risk Factors are Invariant Across Age and Victim-Offender Status

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ABSTRACT

INMATE MISCONDUCT AND VICTIMIZATION: INVESTIGATING THE CHANGES
OVER TIME AND IF THE RISK FACTORS ARE INVARIANT ACROSS AGE AND
VICTIM-OFFENDER STATUS

BY

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Prior to the 1970, there were approximately 196,000 offenders housed in prisons (Cahalan & Parsons, 1986). Today, more than one million offenders are housed in prison (Carson & Anderson, 2016). The increase in the size of the prison population has been, in part, attributed to the shift towards determinate sentencing, which resulted in targeted law enforcement, increased mandatory minimums, longer sentences, and more time spent in prison. The prison boom fueled research that aimed to better understand how inmates adapt to the depriving nature of prisons. Additionally, researchers have examined the victimization experiences of inmates and identified who is most at risk. Despite the vast amount of research that has identified the risk factors of both misconduct and victimization, there are still some gaps in the literature. Although the shift in the dominant sentencing model has been cited as the cause of the change in the prison population, few researchers have examined how these policy shifts may have affected inmate adaptation and behavior while incarcerated. Second, the increase in the amount of time served in prison has resulted in inmates aging in prison. The "greying" of the prison population has drawn attention to the increasing number of older inmates (age 50 and older) in prisons. The prison experiences of

older inmates and how they compare to the experiences of younger inmates are still an understudied area. Finally, the literature shows that misconduct and victimization share numerous risk factors, yet the relationship between experiencing victimization in prison and misconduct has not been explored. The current dissertation aims to extend the prison literature by addressing these three gaps in the literature using data from the *Survey of Inmates in State and Federal Correctional Facilities* series. The main findings are (1) inmates admitted to prison prior to 1980 had the highest rates of misconduct, (2) there are age differences in the risk factors of victimization and misconduct, and (3) the victim-offender overlap exists in prisons and the established risk factors of misconduct and victimization explain who is at risk of being a victim only, offender only, or a victim-offender.

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BY

JANE CHRISTIE DAQUIN

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ACCEPTANCE

      This dissertation was prepared under the direction of Jane Daquin's Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Criminal Justice & Criminology in the Andrew Young School of Policy Studies of Georgia State University.

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DEDICATION

This dissertation is dedicated to my mom, Pascale, whose unwavering love, support, and words of encouragement helped me through this process. Thank you for learning how to use emojis just so you could text me hearts and flowers.

Je t'aime maman.

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CHAPTER I: INTRODUCTION

Over the last several decades, the number of offenders in prisons has increased dramatically. Currently, there are 1.5 million persons housed in state and federal correctional facilities (Carson & Anderson, 2016), compared to the approximately 196,000 inmates housed in prisons in 1970 (Cahalan & Parsons, 1986). The imprisonment rate in the United States increased from 97 per 100,000 U.S. residents in 1970 (Cahalan & Parsons, 1986) to 458 per 100,000 in 2015 (Carson & Anderson, 2016).

With the increase in the imprisonment rate has also come a shift in the distribution of the type of offenses for which offenders are currently incarcerated. Of the various types of offenders, the number of those serving time for drug offenses have increased substantially. In 1980, 6.4% of state prisoners were sentenced for a drug offense (Brown, Gilliard, Snell, Stephan, & Wilson, 1996) compared to 15.7% in 2015 (Carson & Anderson, 2016). The percentage of offenders incarcerated in state facilities for a violent offense declined slightly from 58.6% in 1980 (Brown et al., 1996) to 52.9% in 2015 (Carson & Anderson, 2016). The number of offenders incarcerated in state facilities for a property offense also declined from 1980 to 2015 (30.2% and 19%, respectively). There was an increase in the percentage of public order offenders housed in state prisons from 4.2% in 1980 (Brown et al., 1996) to 11.6% in 2015 (Carson & Anderson, 2016).

Similar changes in offense type are observed in federal facilities. The number of offenders sentenced for a drug offense increased from 25.2% in 1980 (Brown et al., 1996) to 49.5% in 2015 (Carson & Anderson, 2016). The percentage of violent offenders declined substantially from 33.8% in 1980 (Brown et al., 1996) to 7.4% in 2015 (Carson & Anderson, 2016). Similarly, the percentage of property offenders declined from 23.9% in 1980 to 6% in 2015. The number of public order offenders increased from 10.5% in 1980 (Brown et al., 1996) to 36.3% in 2015

(Carson & Anderson, 2016). These changes in the difference offense types in state and federal prisons stemmed, in part, from changes in sentencing policies and law enforcement practices. For instance, the war on drugs led to the increased focus on arresting and prosecuting drug offenders, which resulted in the large increase in the number of drug offenders housed in prisons (Mauer, Potler, & Wolf, 1999; Pfaff, 2015).

Not only has the type of offense for which offenders are incarcerated changed, the demographic characteristics of the prison population have also changed. Overall, the imprisonment rate for males and female have increased; however, this increase was greater for females (Brown et al., 1996; Carson & Anderson, 2016). Despite the deceleration of the imprisonment rate, women have remained disproportionately impacted (Nagel & Johnson, 1994). The prison population is also aging (Carson & Sabol, 2016; Human Rights Watch, 2012). The average age of prisoners has increased from 31.7 years old in 1993 to 37.8 years old in 2013 (Carson & Sabol, 2016). In 1993, approximately 5% of state prisoners were age 50 or older. By 2013, 18.4% of the prison population was age 50 or older, making them the fastest growing age group (Carson & Sabol, 2016). The increase in the 50 and older age group is partly attributed to a large number of offenders aging in prison (Human Rights Watch, 2012). An increasing number of newly admitted prisoners age 50 and older has also contributed to the increase in the number of older prisoners currently incarcerated (Human Rights Watch, 2012).

The changing nature of the prison population may be related to changes in inmate behavior. That is, the changes in the composition of the prison population may be associated with changes in who is likely to offend in prison and the extent to which misconduct occurs in prison. Researchers suggest that an unintended consequence of determinate sentencing and the reduced use of parole was the removal of any incentive for inmates not to engage in misconduct (Bales &

Miller, 2012). Thus, changes in the number of certain types of offenders as a result of harsh sentencing policies may affect who is most likely to offend in prison. Despite this possibility, it is still unclear how changes in the characteristics of the prison population may be associated with changes in the likelihood to engage in misconduct while incarcerated. As such, research is needed to understand how misconduct has changed over time as the makeup of the prison population has changed.

It is clear that changes in the makeup of the prison population have resulted in a greater number of special population inmates. Although a large body of literature has examined how offenders adapt to prison, as well as their experiences while incarcerated, it remains unknown how certain types of inmates (e.g., older inmates) adjust to life in prison. How these individuals adapt to life in prison and what factors predict inmate experiences such as engaging in misconduct and experiencing victimization, warrants further research. Specifically, victimization and misconduct in prison and how the changing nature of prison influences these experiences have recently become the focus of research studies. Despite this, there is limited research on the relationship between age and inmate behavior. In general, researchers have found that older inmates are less likely to engage in misconduct (Camp, Gaes, Langan, & Saylor, 2003; Gendreau, Goggin, & Law, 1997; Jiang & Fisher-Giorlando, 2002; Steiner, Butler, & Ellison, 2014; Wooldredge, Griffin, & Pratt, 2001). Similarly, older inmates are also less likely to experience victimization during incarceration compared to younger inmates (Beck, Berzofsky, Caspar, & Krebs, 2014; Daquin, Daigle, & Listwan, 2016; Lahm, 2009c; Teasdale, Daigle, Hawk, & Daquin, 2016; Wolff, Shi, & Siegel, 2009; Wooldredge, 1994, 1998; Wooldredge & Steiner, 2013). Much of the literature on older inmates has focused on the increasing cost of housing them in prison. The experiences of older inmates and how they differ from other inmates has received

less attention. What is unknown is what risk factors predict misconduct and victimization among older inmates and whether those factors are the same for younger inmates.

Another area that has not been studied is the victim-offender overlap within the prison context. In general, a history of victimization outside of prison has been linked to misconduct in prison (Meade & Steiner, 2013; Steiner & Wooldredge, 2009a, 2009b, 2014; Wooldredge et al., 2001; Wooldredge & Steiner, 2009). A few studies suggest a possible relationship between experiencing victimization in prison and engaging in misconduct. For example, inmates who engaged in major misconduct were more likely to be physically assaulted while incarcerated (Teasdale et al., 2016; Wooldredge & Steiner, 2012). It is unknown whether inmates who experience both victimization and misconduct are different from inmates who either experience victimization or engage in misconduct (or who do not experience either).

Thus, this dissertation aims to fill these gaps in the literature by 1) examining whether the likelihood of misconduct has changed over time as a result of changes in sentencing policies, 2) exploring the misconduct and victimization experiences of older prisoners and whether the risk factors are age-invariant, and 3) exploring what factors predict being a victim, an offender, both a victim and offender, or neither. The following chapters of this dissertation extend what is known about misconduct and victimization in prison. Chapter 2 outlines the methods including data, measures, and analytical strategies used to address the research questions. Chapter 3 contains analyses that examine age-period-cohort (APC) effects on misconduct. Chapter 4 contains analyses that assess whether the factors that predict misconduct and victimization are age-invariant. The analyses in Chapter 5 explore the victim-offender overlap within the prison context and whether the effects of the predictors of victim-offender status are invariant. Chapter 6

discusses the implications of the findings in Chapters 3, 4, and 5 and suggests directions for future

research and policy implications.

CHAPTER II: METHODOLOGY

Data

This chapter outlines the data that are used in analyses in the subsequent chapters. The

data are drawn from the *Survey of Inmates in State and Federal Correctional Facilities* (SISFCF[1])

series collected by the Bureau of Justice Statistics (BJS). The SISFCF series consists of datasets

that are nationally and geographically representative of inmates age 18 years and older in the

United States and have been collected periodically from 1974 to 2004 (the survey periods include

1974, 1979, 1986, 1991, 1997, and 2004). State prison inmates were surveyed in all of the surveys

conducted from 1974 to 2004. Federal prison inmates were interviewed in 1991, 1997, and 2004.

For this dissertation, I will be using the Survey of Inmates in State Correctional Facilities for the

survey years 1979 to 2004 as well as the Survey of Inmates in State and Federal in Correctional

Facilities 2004.[2]

The SISFCF series includes self-reports from inmates about their current offense and

sentence, criminal history, demographic characteristics, family history, prior drug and alcohol use

and treatment programs, prison programs and services, prison rule violations, and violent

victimization during incarceration.

1979 SISCF. The 1979 Survey of Inmates in State Correctional Facilities (SISCF) was

collected by the Bureau of the Census for the BJS and consists of only state prisoners (U. S.

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[1] SISCF refers to the Survey of Inmates in State Correctional Facilities and SIFCF refers to the Survey of Federal Correctional Facilities. SISCF: https://www.bjs.gov/index.cfm?ty=dcdetail&iid=275#Collection_period. SIFCF: https://www.bjs.gov/index.cfm?ty=dcdetail&iid=273
[2] Rule infractions were not measured in the 1974 survey and since this is one of the outcomes measure of interest, the 1974 survey was excluded from the analyses. Additionally, the federal data were only included in analyses using the 2004 SISFCF because federal data are not available for the 1979 and 1986 survey of inmates. To pool the surveys for the APC analyses only state inmates were used. In chapters 4 and 5, only the most recent survey of inmates was used for the following reasons: 1) the analyses were cross-sectional, 2) victimization was only measured in the 1991, 1997, and 2004 surveys, and 3) the most recent survey consists of the largest number of older inmates, thereby, providing a sufficiently large sample size to use for the analyses.

Department of Justice, 1979). In the first stage of sample selection, facilities were divided into two sampling frames: one for male facilities and one for female facilities. Within each sampling frame, facilities were stratified by four geographic regions (Northeast, North Central, South, and West) and were selected based on probability proportional to size. Of the list of 300 state correctional facilities provided by the Bureau of Census, those with a population size greater than 1,147 were labeled self-representing (SR) and were sampled with certainty. All other facilities were labeled as non-self-representing (NSR).[3] The final facility sample included 215 state facilities. In the second stage, inmates were systematically sampled within each facility from a roster. Face-to-face personal interviews using paper questionnaires of 9,142 male and 2,255 female inmates housed in the selected state facilities were then conducted from October through November 1979.

Table 2.1 presents a description of the sample in the SISCF 1979. Approximately 52% of inmates reported being charged with a rule violation since admission to prison. Additionally, on average, inmates reported being written up for four rule violations. The average age of the sample was 29 years old. Approximately 50% of the sample were White and 20% were female. More than three-quarters of the sample (78%) were not married. About 34% of the sample had at least a GED or high school diploma. Twenty percent of the sample served in the armed forces and about 55% had been previously incarcerated. Inmates had served, on average, 21 months in prison. The most common offense inmates were incarcerated for was violent (56%) followed by property (32%), drug (8%), and public order offenses (4%).

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[3] To stratify the facilities, each prison was labeled self-representing (SR), which is treated as a separate stratum and included in the sample with certainty, or non-self-representing (NSR) based on population size. Within each survey, SR facilities are the largest male and female facilities. The number of facilities considered the "largest" varies by survey. All other facilities are labeled NSR. All SR facilities are sampled with certainty.

Table 2.1

Descriptive Statistics of State Inmates, 1979

	SISCF 1979				
Variable	M	SD	Min	Max	N
Dependent variables					
Misconduct (1 = Any Misconduct)	0.524	0.499	0	1	11397
Frequency of Misconduct	3.929	12.933	0	99	11397
Independent variables					
Age	29.155	9.094	14	84	11397
Race (1 = White)	0.501	0.500	0	1	11397
Sex (1 = Female)	0.198	0.398	0	1	11397
Marital Status (1 = Not Married)	0.779	0.415	0	1	11397
Education (1 = At least HS)	0.339	0.473	0	1	11397
Military (1 = Served in Military)	0.201	0.401	0	1	11373
Prior Incarceration (1 = Yes)	0.548	0.498	0	1	11353
Time Served (months)	20.597	31.697	0	876	11384
Offense					
Violent (reference)	0.557	0.497	0	1	11397
Property	0.321	0.467	0	1	11397
Drug	0.080	0.271	0	1	11397
Public Order	0.042	0.202	0	1	11397

1986 SISCF. The sample for the SISCF was obtained from the 1984 Census of State Adult Correctional Facilities, which contained information on 903 correctional facilities (U. S. Department of Justice, 1986). In the first stage of sample selection, facilities were divided into two sampling frames: one for male facilities and one for female facilities. Within each sampling frame, facilities were stratified by type (prison versus community corrections facility) and census region.[4] In the second stage, inmates were systematically sampled within each facility. The final sample consists of completed interviews for 10,798 male and 2,913 female state prisoners housed in 275 prisons and community corrections facilities.[5]

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[4] The codebook does not specify whether facilities were categorized as self-representing or non-self-representing prior to selection.
[5] Although the inmate data were collected in 1986, the interview period is not specified in the codebook.

Table 2.2 presents the descriptive statistics for the sample in SISCF 1986. Approximately 53% of inmates reported being charged with a rule violation since admission to prison. Additionally, on average, inmates reported being written up for five rule violations. The average age of the sample was about 31 years old. Approximately 50% of the sample were White and 21% were female. More than three-quarters of the sample (80%) were not married. About 43% of the sample had at least a GED or high school diploma. Seventeen percent of the sample served in the armed forces and 52% had been previously incarcerated. Inmates had served, on average, 35 months in prison. The most common offense inmates were incarcerated for was violent (54%) followed by property (32%), drug (9%), and public order offenses (5%).

Table 2.2

Descriptive Statistics of State Inmates, 1986

	SISCF 1986				
Variable	M	SD	Min	Max	N[6]
Dependent variables					
Misconduct (1 = Any Misconduct)	0.528	0.499	0	1	13571
Frequency of Misconduct	5.121	30.379	0	2000	13406
Independent variables					
Age	30.635	8.940	14	84	13707
Race (1 = White)	0.499	0.500	0	1	13700
Sex (1 = Female)	0.212	0.409	0	1	13711
Marital Status (1 = Not Married)	0.799	0.401	0	1	13692
Education (1 = At least HS)	0.431	0.495	0	1	13664
Military (1 = Served in Military)	0.169	0.375	0	1	13692
Prior Incarceration (1 = Yes)	0.524	0.499	0	1	13711
Time Served (months)	34.669	35.086	0	552	13632
Offense					
Violent (reference)	0.537	0.499	0	1	13692
Property	0.323	0.468	0	1	13692
Drug	0.090	0.286	0	1	13692
Public Order	0.050	0.218	0	1	13692

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[6] Individuals who did not respond to a survey question are missing on that variable. The variable with the most number of missing is *frequency of misconduct*, which has less than 4% missing. Because there were so few missing cases, I did not impute the missing values.

Beginning in 1991 both state and federal inmates were included in the surveys. The 1991, 1997, and 2004 Survey of Inmates in state and federal Correctional Facilities (SISFCF) were collected by the Bureau of the Census for the BJS Federal Bureau of Prisons (hereafter referred to as BOP) and consists of state and federal inmates (U. S. Department of Justice, 1991, 1997, 2004). In this dissertation, only the state surveys are used for the years 1991 and 1997 were used. As previously noted, the 1991 and 1997 SISCF were only utilized in Chapter 3 for the APC analysis, which examines changes over time. Since the federal data are not available for 1979 and 1986, federal inmates in the more recent data were excluded. Federal inmates were only used in the cross-sectional analyses using the 2004 data in Chapters 4 and 5. To ensure a sufficient number of older individuals and those who have experienced victimization, the most recent survey year with both state and federal inmates was used. A stratified, two-stage sampling design was utilized. In the first stage, facilities were sampled. For SISCF (state), facilities were divided into two sampling frames: one for male prisons and one for female prisons. For all survey years (1991, 1997, and 2004), the facilities in the SISCF were stratified by census region and the number of regions varied by survey year. The second stage of sampling involved the selection of inmates within the facilities. In both the 1997 and 2004 SIFCF, a two-step process was used to ensure the inclusion of a large enough number of nondrug offenders.

1991 SISCF. Personal interviews of inmates were conducted from June through August 1991. The sample of state and federal inmates were derived from the 1990 Census of State and Federal Adult Correctional facilities. Both male and female prisons were grouped into eight strata defined by census region (Northeast, Midwest, South, and West) and facility type (confinement [state] and community-based). Male prisons were then stratified by security level: maximum,

medium, minimum, and unclassified. Male and female prisons were systematically selected based on probability proportional to size, resulting in 277 prisons. In the second stage, inmates were systematically selected from a list provided to interviewers that contained a list of all inmates who had a bed the night prior to the interview. The final sample consists of completed interviews of 13,986 state inmates housed in 277 prisons.

Table 2.3 presents the descriptive statistics for state inmates in the SISCF 1991. Approximately 41% of inmates reported being charged with a rule violation since admission to prison. Additionally, on average, inmates reported being written up for three rule violations. The average age of the sample was 32 years old. Approximately 49% of the sample was White, 20% were female, and more than three-quarters of the sample (82%) were not married. About 40% of the sample has at least a GED or high school diploma. Fourteen percent of the sample served in the armed forces and about 53% had been previously incarcerated. Inmates had served, on average, 30 months in prison. The most common offense inmates were incarcerated for were violent (46%) followed by property (25%), drug (23%), and public order offenses (6%). The percentage of inmates incarcerated for a drug offense increased from 9% in 1986 to 23% in 1991.

Table 2.3

Descriptive Statistics of State Inmates, 1991

Variable	SISCF 1991				
	M	SD	Min	Max	N
Dependent variables					
Misconduct (1 = Any Misconduct)	0.414	0.493	0	1	13921
Frequency of Misconduct	2.901	17.133	0	740	13986
Independent variables					
Age	31.938	9.293	14	81	13986
Race (1=White)	0.489	0.500	0	1	13986
Sex (1 = Female)	0.202	0.401	0	1	13986
Marital Status (1 = Not Married)	0.820	0.384	0	1	13836
Education (1 = At least HS)	0.404	0.491	0	1	13874
Military (1 = Served in Military)	0.141	0.348	0	1	13986
Prior Incarceration (1 = Yes)	0.533	0.499	0	1	13925
Time Served (months)	30.27	41.003	0	540	13890
Offense					
Violent (reference)	0.462	0.499	0	1	13847
Property	0.253	0.435	0	1	13847
Drug	0.230	0.421	0	1	13847
Public Order	0.055	0.227	0	1	13847

1997 SISCF. The sample for the SISCF was obtained from a universe of 1,409 state prisons enumerated from the 1995 Census of State and Federal Correctional Facilities. The state prison universe consisted of 1,278 male prisons and 278 female prisons. NSR male and female facilities were grouped into 7 strata defined by census region: Northeast, New York, Midwest, South, Texas, West, and California. Within each stratum, facilities were ordered by security level (maximum, medium, minimum and none) and size of the population.

In the second-stage of sample selection, inmates were selected. In the SISCF, 12,269 males and 3,116 females were sampled. After the state samples were obtained, one hour personal interviews using computer-assisted personal interviewing (CAPI) were conducted from June through October 1997. The two-stage sampling method resulted in completed interviews for 14,285 state inmates housed in 275 State prisons.

Table 2.4 presents the descriptive statistics for inmates in SISCF 1997. Approximately 52% of inmates reported being charged with a rule violation since admission to prison. Additionally, on average, inmates reported being written up for three rule violations. The average age of the sample was 34 years old. Approximately 46% of the sample were White and 21% were female. More than three-quarters of the sample (83%) were not married. About 38% of the sample has at least a GED or high school diploma. Eleven percent of the sample served in the armed forces and about 64% had been previously incarcerated. Inmates had served, on average, 41 months in prison. The most common offense inmates were incarcerated for was violent (44%) followed by drug (23%), property (23%), and public order offenses (10%).

Table 2.4

Descriptive Statistics of State Inmates, 1997

	SISCF 1997				
Variable	M	SD	Min	Max	N
Dependent variables					
Misconduct (1 = Any Misconduct)	0.521	0.500	0	1	14069
Frequency of Misconduct	2.998	10.283	0	351	14285
Independent variables					
Age	33.545	9.533	15	89	14285
Race (1 = White)	0.461	0.499	0	1	14285
Sex (1 = Female)	0.206	0.404	0	1	14285
Marital Status (1 = Not Married)	0.834	0.372	0	1	14261
Education (1 = At least HS)	0.383	0.486	0	1	14184
Military (1 = Served in Military)	0.108	0.310	0	1	14277
Prior Incarceration (1 = Yes)	0.636	0.481	0	1	14252
Time Served (months)	41.461	50.884	0	528	14142
Offense					
Violent (reference)	0.438	0.496	0	1	14120
Property	0.227	0.419	0	1	14120
Drug	0.233	0.423	0	1	14120
Public Order	0.102	0.303	0	1	14120

2004 SISFCF.[7] Both the State and Federal surveys for this year will be used in this

dissertation. The personal interviews for the 2004 SISFCF (state and federal) were collected from

October 2003 through May 2004 using a two-stage sampling method (U. S. Department of

Justice, 2004). The sample of 1,758 State prisons for the SISCF (state) was obtained from the BJS

2000 Census of State and Federal Correctional Facilities. State facilities were grouped in to eight

strata, defined by census region: Northeast, New York, Midwest, South, Florida, Texas, West, and

California.

    The sample for SIFCF (federal) was selected from the BOP and contained a list of 148

prisons. Male prisons were grouped into five strata defined by security level: administrative, high,

medium, low, and minimum. Female prisons were grouped into two strata based on security level:

minimum and all other security levels. Inmates were randomly selected within each facility. In the

SISCF, 13,098 males and 3,054 females were sampled. In the SIFCF, 3,347 males and 1,009

females were sampled. For both State and Federal samples, an oversample of inmates was

selected to ensure increased representation of nondrug offenders. For the drug offender

subsample, only 1 in every 3 drug offender was selected.

    One hour personal interviews, using computer-assisted personal interviewing (CAPI),

were conducted for all state and federal inmates between October 2003 and May 2004. The two-

stage sampling method resulted in complete interviews for 14,499 State and 3,686 Federal

inmates housed in 287 State prisons and 39 Federal prisons.

    Table 2.5 presents the descriptive statistics of inmates in SISCF 2004. Approximately

51% of inmates reported being charged with a rule violation since admission to prison.

Additionally, on average, inmates reported being written up for two rule violations. The average

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[7] SISFCF references the Survey of Inmates in State and Federal Correctional Facilities.

age of the sample was 35 years old. Approximately 50% of the sample were White and 20% were female. More than three-quarters of the sample (83%) were not married. About 34% of the sample has at least a GED or high school diploma. Nine percent of the sample served in the armed forces and about 20% had been previously incarcerated. Inmates had served, on average, 47 months in prison. The most common offense inmates were incarcerated for was violent (48%) followed by property (22%), drug (21%), and public order offenses (9%).

Table 2.5

Descriptive Statistics of State Inmates, 2004

	SISCF 2004				
Variable	M	SD	Min	Max	N
Dependent variables					
Misconduct (1= Any Misconduct)	0.507	0.500	0	1	14499
Frequency of Misconduct	2.420	10.459	0	399	14499
Independent variables					
Age	35.351	10.413	16	84	14499
Race (1 = White)	0.500	0.500	0	1	14380
Sex (1 = Female)	0.202	0.402	0	1	14499
Marital Status (1 = Not Married)	0.834	0.372	0	1	14466
Education (1 = At least HS)	0.335	0.472	0	1	14495
Military (1 = Served in Military)	0.091	0.288	0	1	14483
Prior Incarceration (1 = Yes)	0.189	0.392	0	1	14027
Time Served (months)	46.957	62.632	0	516	14150
Offense					
Violent (reference)	0.481	0.500	0	1	14176
Property	0.224	0.417	0	1	14176
Drug	0.209	0.407	0	1	14176
Public Order	0.086	0.280	0	1	14176

Table 2.6 presents the descriptive statistics of inmates in SIFCF 2004 (federal). Approximately 30% of inmates reported being charged with a rule violation since admission to prison. Additionally, on average, inmates reported being written up for fewer than one rule violation. The average age of the sample was 38 years old. Approximately 48% of the sample was

White and 26% were female. More than three-quarters of the sample (74%) were not married.

About 47% of the sample had at least a GED or high school diploma. Nine percent of the sample

served in the armed forces and about 9% had been previously incarcerated. Inmates had served,

on average, 44 months in prison. The most common type of offense inmates were incarcerated for

was drug (37%) followed by property (26%), violent (22%), and public order offenses (16%).

Table 2.6

Descriptive Statistics of Federal Inmates, 2004

Variable	SIFCF 2004				
	M	SD	Min	Max	N
Dependent variables					
Misconduct (1= Any Misconduct)	0.302	0.459	0	1	3582
Frequency of Misconduct	0.740	4.073	0	182	3686
Independent variables					
Age	37.739	10.679	19	79	3686
Race (1 = White)	0.476	0.499	0	1	3645
Sex (1 = Female)	0.260	0.439	0	1	3686
Marital Status (1 = Not Married)	0.736	0.441	0	1	3674
Education (1 = At least HS)	0.466	0.499	0	1	3685
Military (1 = Served in Military)	0.093	0.291	0	1	3680
Prior Incarceration (1 = Yes)	0.108	0.311	0	1	3529
Time Served (months)	44.451	50.294	0	516	3263
Offense					
Violent (reference)	0.217	0.412	0	1	3579
Property	0.259	0.438	0	1	3579
Drug	0.365	0.481	0	1	3579
Public Order	0.159	0.366	0	1	3579

Outcome Measures

In this dissertation, there were two outcome measures of interest: misconduct and

victimization.

1979 and 1986 SISCF. To measure institutional misconduct, respondents were asked

"Since your admission in [CURRENT ADMISSION DATE], have you been formally charged

with breaking any of the rules?" Additionally, respondents were asked to report the number of times they had been charged with a rule violation.

SISFCF. In the 1991, 1997, and 2004 SISFCF, to measure institutional misconduct respondents were asked "Since your admission [MOST RECENT ADMISSION DATE], have you been written up or found guilty of breaking any of the prison rules?" Measures of the type of rule violations respondents were written up for or found guilty of were also included. The types of rule violations included drug violation, alcohol violation, possession of a weapon, possession of stolen property, possession of other unauthorized substance or item, verbal assault of a staff member or another inmate, physical assault of a staff member or another inmate, escape or attempted escape, being out of place, disobeying orders, and other major or minor violations. Further, respondents were asked to indicate the number of times they were written up or found guilty for each type of rule violation since their admission to prison.

Victimization. Respondents were asked the following: "Since your admission [MOST RECENT ADMISSION DATE], have you been injured in a fight, assault, or incident in which someone tried to harm you?"[8] Because of the low frequency for sexual victimization[9], a single measure of whether respondents experience violent (physical) victimization was used.

The variables described in the following section are those that are used in the subsequent analyses. In Chapter 3, only control variables are included, such as age, race, sex, marital status, education, military service, prior incarceration, time served in months, and controlling offense. With the exception of military service, all of these variables, in addition to the others described below, were included in all analyses in Chapters 4 and 5. No prison-level variables were included

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[8] Victimization was not measured in the SISCF 1979 and 1986.
[9] Of the 18,185 respondents, 24 indicated having been sexually assaulted since admission.

in Chapter 3 because the prison identification variable needed to aggregate the data was not available.

Measures

Level-1 predictors. A large number of possible predictors were included for model specification. As done in previous research on inmate misconduct and prison victimization, prior abuse, mental disorder, age, sex, race, Hispanic origin, marital status, education, prior incarceration, offense, time served, and hours in cell were included as control variables (Hensley, Tewksbury, & Castle, 2003; Lahm, 2009b; Steiner & Wooldredge, 2009b, 2014; Teasdale et al., 2016; Wooldredge, 1998; Wooldredge & Steiner, 2012).[10]

Prior abuse measured physical and sexual abuse experiences of prisoner's that occurred prior to current admission to prison and was coded 1 if physically or sexually victimized and 0 if not victimized. To measure *mental disorder,* respondents were asked if they have ever been told by a mental health professional that they had a particular disorder, which includes depression, anxiety, bipolar disorder, a psychotic disorder, PTSD, or any other disorders.[11] A single measure was created that captured whether a respondent had any mental disorder (coded 1) or not (coded 0). Respondents' *age* was measured as a continuous variable that ranged from 16 to 84. *Sex* was a dichotomous variable that captured respondents' biological sex where males were coded as 0 and females were coded as 1. Respondents were asked to identify their *race* with categories including White, Black, Asian, American Indian, Hawaiian, and other. The variable was recoded as 1 for White and 0 for non-White because of the small number of cases in the other racial groups. A

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[10] In chapter 3, only inmate demographic variables were included in the analyses. All control variables described here were included in the analyses in chapters 5 and 6.

[11] The mental disorders listed are all of the disorders included in the survey. To control for having ever been diagnosed with a disorder the single measure that askes about any diagnosis was used.

separate measure was created to capture whether inmates were of Hispanic origin. *Hispanic* was

coded 1 if inmates indicated being Hispanic and 0 for non-Hispanic.

To measure *marital status* respondents were asked "Are you married, widowed, divorced,

separated, or have you never been married?" A dichotomous variable coded 1 for not married and

0 for married was created. *Education* measured whether inmates had received at least a high

school diploma or GED and was coded 0 for no and 1 for yes. Inmates' history of incarceration

was also measured. *Prior incarceration* measured whether an inmate had been incarcerated at

least once before (coded as 1). Dummy variables were created for the *conviction offense* variable

that measured the inmates' controlling offense (i.e., the offense that controls their release): violent

(referent category), property, drug, and other.

Time served was measured in months as a continuous variable that captured the number of

months inmates had served at the time of the interview. To control for *facility security level* for

both state and federal prisoners, the question asking "In the last 24 hours, how much total time did

you spend where you sleep? Include time spent sleeping as well as doing things other than

sleeping" was used as a measure of the number of hours respondents spent in their cell.[12] The

distributions of age, time served, and hours were positively skewed so the natural log was taken

for each measure.

Several other predictors were included, such as chronic illness, disability, homelessness,

distance from home, and having children. Inmates were asked whether they had a chronic illness

including, diabetes, arthritis, heart problems, high blood pressure, cancer, kidney problems,

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[12] *Hours in cell* is used as a proxy for security level. Although the federal sample was stratified by facility security level, the state sample was stratified by census regions and security level is not available. As such, the hours inmate spent in their cell is used, with the assumption that those spending more time in their cell are in more restrictive housing. Additionally, a crosstab examining the relationship between hours in cell and security level of federal facilities was produced (not shown). The results indicate that the majority of inmates who spent most of their time in their cell (i.e., 19 or more) were housed in a high security or administrative security prisons.

asthma, cirrhosis, and hepatitis. *Chronic illness* measured whether an inmate had any chronic illness (coded 1) or not (coded 0). The *disability* measure was derived from three self-defined survey items capturing whether inmates had difficulty hearing or seeing, required help with activities of daily living, or was paralyzed. The final measure was coded 1 for at least one disability and 0 for no difficulties. *Homelessness* measured whether inmates reported being homeless prior to the current incarceration (0 for no and 1 for yes). *Distance* measured how far away the address where inmates were residing prior to incarceration is from the facility they are currently housed in. The original variable measured distance using the following categories: less than 50 miles, between 50 and 100 miles, between 101 and 500 miles, between 501 and 1000 miles, and more than 1000 miles. There were very few inmates residing more than 500 miles from the facility; therefore, individuals in those categories were collapsed into the 101 to 500 miles category. Further, examination of the relationship between the original variable and the outcomes showed that living less than 50 miles from the prison was not significantly related to either misconduct or victimization. The final variable was a binary variable that measures whether inmates were in prison less than 100 miles (coded 0) or 100 miles or more (coded 1) from their pre-incarceration address. The *children* variable measured whether inmates reported having any children (coded 0 for no and 1 for yes).

Level-2 predictors. Aggregate measures were created to characterize the sample of the facilities. The *type of facility* measure assesses whether inmates were housed in State (coded as 0) or Federal (coded as 1) facilities. *Proportion of older inmates* indicates the proportion of inmates within a facility that were age 50 or older. Inmates age 50 and older are considered to be elderly in prisons. A more detailed discussion of how the older prisoner is defined is included in Chapter 4. *Proportion of White inmates* was measured by indicating the proportion of inmates who are

White within a facility. *Proportion of violent inmates* captures the proportion of inmates in a facility who are currently incarcerated for a violent offense. Ten dichotomous survey questions also asked whether respondents participated in any programs or groups, which included job training, educational programs, religious studies, ethnic/racial organizations, inmate assistance or counseling, self-help groups, employment counseling, parenting skills classes, life skills class, and other pre-release programs. A single variable, *program participation*, was created and coded as 1 for participation in any program and 0 for no participation.[13] A measure of the *proportion of program participation* captures the proportion of inmates in a facility that participate in structured programing. A measure of the *average hours inmates spent in their cells* was included.

Analytical procedure

This dissertation addressed the key research questions listed below separately in the following three empirical chapters. This section outlines the analytical procedure for each chapter and presents the descriptive statistics for the data that are used in each set of analyses.

Procedure for Chapter 3. In Chapter 3, repeated survey analysis is used to examine trends in institutional misconduct over time using SISCF data from the 1979, 1986, 1991, 1997, and 2004 samples (only state data). In doing so, I answer the following research questions:

1. Does the aging of the prison population effect misconduct (age effects)?
2. Does the likelihood of misconduct vary across survey years (period effects)?
3. How has sentencing policy affected misconduct (cohort effects)?
    a. Are persons incarcerated in a particular year at greater risk of engaging in misconduct?

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[13] Across all of the models, the program variable was not a significant predictor, and therefore, was removed from the level-1 model. This variable was used as a level-2 predictor.

The final model selection criteria used for the APC analyses are discussed in Chapter 3. To answer these questions Age-Period-Cohort (APC) analysis was used to examine these three effects on institutional misconduct. Age effects refer to changes that "result from more specific processes related to aging or life-cycle status" (Firebaugh, 1997, p. 6). If age effects account for differences in the likelihood of misconduct, then one might expect each successive cohort to reproduce the life-course pattern of misconduct. For example, the extant literature on prison misconduct shows that as prisoners get older, the likelihood of misconduct declines (Blowers & Blevins, 2015; Gendreau et al., 1997; Jiang & Fisher-Giorlando, 2002; Steiner et al., 2014). If this trend persists, we can expect that regardless of when inmates entered prison or when they were surveyed, as inmates reach a certain point in the life course, the rate of misconduct will begin to decline.

Period effects refer to social changes that affect everyone (i.e., all cohorts and ages) uniformly (Firebaugh, 1997). For example, in this dissertation, periods were defined by the year in which inmates were surveyed. The presence of period effects in this paper would suggest that the behavior of inmates in a given survey year are not a product of admission year (i.e., policies). Instead, period effects would show that inmates in a given survey year have a greater propensity to engage in misconduct compared to those surveyed at a different time. Period effects could reflect differences in prisons and prison staff in a particular time period that accounts for inmate behavior or the likelihood of being written up for a rule violation. A cohort is a group of persons who experience an event in the same time period (Ryder, 1965). In this dissertation, a cohort was represented by all inmates who were admitted to prison in the same year. A description of the cohorts in these data is provided in Table 2.8. The presence of cohort effects to explain misconduct in this paper would indicate that the behavior of inmates admitted to prison in the

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same year is differentially affected by sentencing policies. Cohort effects may represent the effect of harsh sentencing on inmate behavior.

To examine these effects, I used a repeated survey analysis. Repeated survey design is also known as a repeated cross-sectional design, in which a survey is administered by an agency, or some other organization, that asks the roughly same questions to different samples of people over time (Firebaugh, 1997). In the Survey of Inmates, the wording of some questions were modified from survey to survey. The same questionnaire is administered over time. This method differs from panel survey design in that the same sample of people are not interviewed each time the survey is administered. The data that were used for this analysis were collected using surveys that were administered to five different nationally representative samples of prison inmates roughly every five to seven years. The questions asked to each sample remain largely unchanged, although some additional and altered questions were asked in later surveys.

Analyses were conducted in five stages. The first stage involved pooling the five datasets using SPSS. Second, univariate analyses were conducted for the pooled data. Third, the bivariate relationship between the predictors and outcome measure were examined. As part of this stage, the relationship between the three functions (APC effects) and misconduct are graphically depicted (See Figures 3.1 to 3.3). Fourth, the age-period-cohort accounting models were estimated. The guidelines for estimating APC effects outlined by Yang and Land (2013) were used. The estimation of the APC accounting models was done in several steps that include the following:

1. Descriptive analyses using graphics to generate an understanding of the patterns of age, period, and cohort variations.

2. Model specification tests that examine whether it is necessary to include all three dimensions.

   a. For these tests, several models will be produced (AP, AC, PC, and APC) and the model fit of each will be examined to determine which of the dimensions should be included in the final analysis.

Table 2.7 describes the sample in the pooled data (i.e., includes state inmates in all five surveys). There are a total of 67,878 inmates in the state inmate sample across the five survey years. Approximately 50% of the pooled sample were written up for a rule violation. The average number of rule violations reported is 3.4. There were five periods (SISCF 1979, 1986, 1991, 1997, and 2004). There were 82 potential admission cohorts (years of admission range from 1903 to 2004). There were 71 single years of age (14 to 89), with the pooled sample having an average age of 32 years. Forty-nine percent of inmates were non-White and 32% are female. Approximately 82% were not married, 38% had served in the military, and 48% had been previously incarcerated. Inmates had served an average of 35 months in prison. The most common offense among the sample of pooled inmates were incarcerated for was violent (49%) followed by property (27%), drug (17%), and public order (7%).

Table 2.7

Descriptive Statistics for the Pooled (1979, 1986, 1991, 1997, 2004) *Data (N =*
67,878)

Variable	Pooled Data				
	M	SD	Min	Max	N
Dependent variables					
Misconduct (1 = Any Misconduct)	0.498	0.500	0	1	67199
Frequency of Misconduct	3.432	17.855	0	2000	67573
Independent variables					
Period	3.100	1.389	1	5	67878
Cohort	1988.905	8.523	1903	2004	67405
Age	32.275	9.730	14	89	67878
Race (1 = White)	0.490	0.500	0	1	67748
Sex (1 = Female)	0.320	0.467	0	1	67878
Marital Status (1 = Not Married)	0.815	0.388	0	1	67652
Education (1 = At least HS)	0.379	0.485	0	1	67614
Military (1 = Served in Military)	0.139	0.346	0	1	67811
Prior Incarceration (1 = Yes)	0.484	0.500	0	1	67268
Time Served (months)	35.393	47.082	0	876	67198
Offense					
Violent (reference)	0.492	0.500	0	1	67232
Property	0.267	0.442	0	1	67232
Drug	0.172	0.378	0	1	67232
Public Order	0.068	0.252	0	1	67232

Table 2.8 presents the number of inmates who were admitted to prison in a given year.

The majority of inmates in the pooled data were admitted beginning in the 1970s, with 54.6% of

inmates admitted between 1975 and 1990. Few inmates (less than 1%) in these data were

admitted to prison prior to the late 1960s, as such for the subsequent analyses, inmates admitted

between 1903 and 1975 were combined into a single cohort. Pooling that data allows for the

examination of whether individual-level relationships have changed over time.

Table 2.8

Frequency of Inmates by Admission Year

Year	Freq.	Percent	Year	Freq.	Percent
1903	1	0.00	1974	487	0.72
1906	1	0.00	1975	751	1.11
1907	1	0.00	1976	1,163	1.73
1931	1	0.00	1977	1,940	2.88
1936	1	0.00	1978	3,110	4.61
1940	1	0.00	1979	4,867	7.22
1944	1	0.00	1980	740	1.10
1946	1	0.00	1981	1,060	1.57
1947	1	0.00	1982	1,443	2.14
1948	2	0.00	1983	2,196	3.26
1949	2	0.00	1984	3,012	4.47
1952	1	0.00	1985	5,451	8.09
1953	3	0.00	1986	1,565	2.32
1954	1	0.00	1987	1,067	1.58
1956	4	0.01	1988	1,420	2.11
1958	5	0.01	1989	2,498	3.71
1959	4	0.01	1990	4,496	6.67
1960	8	0.01	1991	4,522	6.71
1961	6	0.01	1992	1,005	1.49
1962	15	0.02	1993	1,298	1.93
1963	11	0.02	1994	1,822	2.70
1964	18	0.03	1995	2,404	3.57
1965	34	0.05	1996	3,311	4.91
1966	30	0.04	1997	3,448	5.12
1967	36	0.05	1998	569	0.84
1968	128	0.19	1999	807	1.20
1969	2	0.00	2000	1,069	1.59
1970	109	0.16	2001	1,563	2.32
1971	152	0.23	2002	2,574	3.82
1972	249	0.37	2003	4,503	6.68
1973	302	0.45	2004	113	0.17

Procedure for Chapter 4. In Chapter 4, I examine whether the predictors of inmate misconduct and victimization are age-invariant. Specifically, this chapter address the following research questions:

1. Among older prisoners, using the importation/deprivation theoretical framework as a guide, what factors predict offending and victimization in prison?

    a. Are the predictors of misconduct and victimization the same for older and younger inmates?

    b. Does the prison environment impact the risk of misconduct and victimization for younger and older prisoners?

One aim of this paper was to examine what individual –level factors identified in the deprivation and importation literature impact the risk of being victimized or engaging in misconduct among older prisoners. The second aim of this paper is to examine how the prison environment impacts the risk of both misconduct and victimization. Another purpose of this paper was to examine whether the risk factors of victimization and misconduct are the same across age groups. Analyses were conducted in five stages. First, univariate analyses were conducted in STATA 14. Second, bivariate relationships between the predictors and the outcome measures were examined. Third, using a multilevel framework, negative binomial regression and multivariate logistic regression were used to examine the effects of individual-level and prison-level predictors on misconduct and victimization and to examine whether the relationships observed at the bivariate level remained. At each stage, separate models were run for younger (age 16-49) and older (age 50 and older) inmates. The final stage of analysis involved examining interaction terms to determine whether the differences observed in the split model were significant.

      Sample description. This analysis used the 2004 Survey of Inmates State and Federal Correctional Facilities (SISFCF) to address the above research questions. The sample consisted of 18,185 state and federal inmates. For the analyses in this paper, separate models were run for

younger inmates (age 49 or younger) and older inmates (age 50 or older). The sample consisted of 16,278 inmates age 49 or younger. Approximately 10% of the sample (n = 1,907) were age 50 or older. All of the facilities in the sample (N = 326) house younger inmates. Of the facilities, only 303 facilities house older inmates. The descriptive statistics for the full sample are presented in Table 2.9.

The average number of write ups for the sample was two. Thirteen percent of inmates reported experiencing physical victimization while incarcerated. Approximately 39% of inmates reported having a chronic illness, 17% reported a disability, 27% reported being diagnosed with a mental disorder, and 24% reported experiencing victimization prior to prison. Seventeen percent of the sample had been previously incarcerated. On average, inmates served 46 months in prison and spent about 13 hours in their cell. The majority of the sample was serving time for a violent offense (43%), followed by drug (24%), property (23%), and public order offenses (10%). The average age of the sample was 36 years old. About 21% of the sample was female, 81% was not married, 50% was White, 19% was Hispanic, and 36% had at least a high school diploma or GED.

About 20% of inmates were housed in federal prisons. The percentage of the inmate population that were 50 years or older in the facilities ranged from 0% to 76%. Across facilities, between 9% and 90% of inmates were White. The percentage of violent offenders housed in a facility ranged from 0% to 94%. The percentage of inmates in programs in a facility ranged from 14% to 98%. Across facilities, the average time inmates in a given facility spent in their cell ranged from about eight hours to 21 hours.

Table 2.9

Descriptive Statistics for the Full Sample of State and Federal Inmates in 2004

	Full Model				
	M	SD	Min	Max	N
Dependent Variables					
Frequency of Misconduct	2.080	9.540	0	399	18185
Victimization	0.130	0.340	0	1	17932
Level-1 Covariates					
Chronic Illness (1 = At least 1 Illness)	0.394	0.489	0	1	17942
Disability (1 = At least 1 Disability)	0.168	0.374	0	1	19764
Mental Disorder	0.270	0.440	0	1	17881
Prior Abuse	0.240	0.430	0	1	17964
Prior Incarceration	0.170	0.380	0	1	17556
Time Served	46.490	60.520	0	516	17413
Hours in Cell	12.590	5.680	0	24	17703
Offense					
Violent Offense (reference)	0.430	0.490	0	1	17755
Property Offense	0.230	0.420	0	1	17755
Drug Offense	0.240	0.430	0	1	17755
Public Order	0.100	0.300	0	1	17755
Age	35.835	10.511	16	84	18185
Sex (1 = Female)	0.214	0.410	0	1	18185
Marital Status (1 = Not Married)	0.814	0.389	0	1	18140
Race (1 = White)	0.495	0.500	0	1	18025
Hispanic (1 = Hispanic)	0.189	0.390	0	1	18185
Education (1 = At least HS)	0.360	0.480	0	1	18180
Level-2 Covariates					
Type of Facility (1 = Federal)	0.203	0.402	0	1	18185
Proportion Older	0.105	0.080	0.000	0.756	18185
Proportion White	0.495	0.163	0.089	0.900	18185
Proportion Violent	0.426	0.234	0.000	0.944	18185
Proportion Program	0.692	0.158	0.140	0.981	18185
Avg Hours in Cell	12.593	2.352	7.784	21.295	18185

     Younger inmates. First, descriptive statistics for younger inmates are presented in Table

2.10. The average number of rule violations reported by younger inmates is about 2.

Approximately 14% of younger inmates reported experiencing victimization since admission to

prison. About 36% of inmates reported having at least one chronic illness and 15% claimed a physical disability. More than one-quarter of the sample (27%) reported having a mental disorder. A quarter of the sample (25%) reported experiencing abuse prior to incarceration. The average amount of time inmates had been incarcerated at the time of the survey was 42 months. On average, inmates reported spending about 13 hours in their cell. The majority of the sample noted that they were incarcerated for a violent offense (42%) followed by a drug offense (25%), property offense (23%), and public order offense (10%). The average reported age of younger inmates was 33 years old. About 22% of the sample identified as female and 48% as White. Nineteen percent of the sample identified as Hispanic. The majority of the sample (82%) was not married. Thirty-four percent reported having at least a GED or high school diploma.

Several prison-level variables were included. Nineteen percent of the facilities included in the sample were Federal. The percentage of older inmates housed within a facility ranges from 0 to 76%. The percentage of White inmates ranged from 9% to 90% per prison. The percentage of inmates incarcerated for a violent offense ranged from 0% to 94%. The percentage of inmates participating in programs ranged from 14% to 99%. The amount of time inmates spent in their cell, on average, was about 13 hours and ranged from about eight hours to 21 hours.

Older inmates. The average number of rule violations reported by older inmates is about one. Approximately 11% of older inmates reported experiencing victimization since admission to prison. About 72% of inmates reported having at least one chronic illness and 34% indicated having a physical disability. Almost one-quarter of the sample (24%) reported having a mental disorder. Approximately 20% of older inmates reported experiencing abuse prior to incarceration. About 12% of inmates indicated that they had been previously incarcerated. The average amount of time inmates had been incarcerated at the time of the survey was 86 months. On average,

inmates reported spending about 13 hours in their cell. The majority of the sample noted that they were incarcerated for a violent offense (50%) followed by a property offense (21%), drug offense (19%), and public order offense (9%). The average age of older inmates was 56 years old. About 19% of the sample identified as female and 62% as White. Fourteen percent of the sample identified as Hispanic. The majority of the sample (74%) were not married. Fifty-two percent of the sample reported having at least a GED or high school diploma.

Several prison-level variables were included. Approximately 29% of the facilities included in the sample were Federal. The percentage of older inmates housed within a facility ranges from 2% to 76% and the percentage of White inmates ranged from 12% to 90%. The percentage of inmates incarcerated for a violent offense ranged from 0% to 94%. The percentage of inmates participating in programs ranged from 14% to 98%. On average, inmates in a given prison spent approximately 12 hours in their cell. The amount of time inmates spent in their cell, on average, was about 13 hours and ranged from about eight hours to 21 hours.

Table 2.10

Descriptive Statistics by Age Group for State and Federal Inmates in 2004

Variable	Younger Inmates (n = 16,278)					Older Inmates (n = 1,907)				
	Mean	**Std.**	**Min**	**Max**	**N**	**Mean**	**Std.**	**Min**	**Max**	**N**
Dependent variables										
Freq. of misconduct	2.192	9.859	0	399	16278	1.112	6.114	0	206	1907
Victimization (1 = Experienced Victimization)	0.136	0.343	0	1	16053	0.109	0.311	0	1	1879
Level-1 Covariates										
Chronic Illness (1 = At least 1 Illness)	0.356	0.479	0	1	16061	0.715	0.452	0	1	1881
Disability (1 = At least 1 Disability)	0.148	0.355	0	1	16081	0.335	0.472	0	1	1883
Any Mental Disorder (1 = Diagnosed Any Disorder)	0.269	0.443	0	1	16010	0.239	0.427	0	1	1871
Prior Abuse (1 = Experienced Prior Abuse)	0.249	0.433	0	1	16087	0.196	0.397	0	1	1877
Prior Incarceration (1 = Previously Incarcerated)	0.180	0.384	0	1	15705	0.116	0.320	0	1	1851
Time Served (months)	42.062	53.485	0	516	15604	84.657	94.643	0	516	1809
Hours in cell	12.594	5.709	0	24	15842	12.581	5.447	1	24	1861
Offense										
Violent (reference)	0.419	0.493	0	1	15892	0.501	0.500	0	1	1863
Property	0.233	0.423	0	1	15892	0.214	0.410	0	1	1863
Drug	0.246	0.431	0	1	15892	0.192	0.394	0	1	1863
Public	0.102	0.302	0	1	15892	0.093	0.290	0	1	1863
Age	33.464	8.118	16	49	16278	56.076	5.780	50	84	1907
Sex (1 = Female)	0.216	0.412	0	1	16278	0.194	0.396	0	1	1907
Race (1 = White)	0.481	0.500	0	1	16131	0.617	0.486	0	1	1894
Hispanic (1 = Hispanic)	0.194	0.396	0	1	16278	0.144	0.351	0	1	1907
Marital Status (1 = Not Married)	0.823	0.381	0	1	16239	0.736	0.441	0	1	1901
Education (1 = At least HS)	0.342	0.475	0	1	16273	0.523	0.500	0	1	1907
Level-2 Covariates										
Type of Facility (1 = Federal)	0.193	0.397	0	1	326	0.287	0.455	0	1	303
Proportion Older	0.098	0.069	0	0.756	326	0.160	0.108	0.017	0.756	303
Proportion White	0.493	0.164	0.089	0.900	326	0.513	0.153	0.120	0.900	303
Proportion Violent	0.424	0.231	0.000	0.944	326	0.439	0.255	0.000	0.944	303
Proportion Program	0.690	0.159	0.140	0.987	326	0.708	0.147	0.140	0.981	303
Avg Hours in Cell	12.627	2.359	7.784	21.295	326	12.301	2.272	7.784	21.295	303

Procedure for Chapter 5. In Chapter 5, I examine what factors predict being a victim, offender, or both a victim and offender (compared to being neither a victim nor offender) while incarcerated. This chapter addresses the following research questions:

1. Are the risk factors the same for victims, offenders, and victim-offenders in prison?

    a. Does the prison environment impact the risk of being a victim, offender, or both?

Analyses for this study were conducted in four stages. The first stage involved univariate analyses conducted in STATA 14. The second stage involved examining the bivariate relationships between the predictors of interest and the outcome measure. Third, a multinomial logistic regression model using a multilevel framework was run to examine the predictors of victim-offender status and to examine whether the relationships observed at the bivariate level remain.

This chapter used the 2004 SISFCF (State and Federal) data to address the research questions. In the sample, there were 18,185 inmates housed in 326 state and federal facilities. Table 2.11 presents the descriptive statistics for all of the measures that were used. The dependent variable of interest was victim-offender status. About 51% of the sample reportedly had not experienced victimization or engaged in misconduct since admission to prison. Approximately 2% reported being victimized, but did not engage in misconduct. Thirty-six percent indicated that they engaged in misconduct, but did not experience victimization. Approximately 11% of the sample noted experiencing both victimization and involvement in misconduct.

Thirty-nine percent of inmates reported a chronic illness and 17% reported a physical disability. Eight percent of inmates indicated being homeless prior to admission to prison, and 67% reported residing more than 100 miles from the facility in which they are currently housed.

Seventy percent of inmates indicated having at least one child. About 24% of the sample experienced victimization prior to prison. About 27% of inmates reported having ever been diagnosed with a mental disorder and 67% met the DSM-IV criteria for substance abuse and dependence problems. Twenty-one percent of inmates identified as female. Eighty-one percent of the sample reported not being married, 50% identified as White, and 19% identified as Hispanic. About 36% reported having at least a high school diploma or GED. The average reported age of the sample was about 36%. Seventeen percent on inmates reported being previously incarcerated. On average, inmates spent about 13 hours in their cells. The average amount of time inmates had been incarcerated at the time of the survey was 46 months. The majority of the sample indicated being incarcerated for a violent offense (43%) followed by a drug offense (23%), property offense (24%), and public order offense (10%).

Several prison-level variables were included. Approximately 20% of the facilities included in the sample were Federal. The percentage of older inmates housed in the facilities ranged from 0% to 76%. The percentage of White inmates per facility ranged from 9% to 90%. The percentage of inmates incarcerated for a violent offense ranged from 0% to 94%. The percentage of inmates participating in programs ranged from 14% to 98%. On average, inmates within the prison spent approximately 13 hours in their cell. The percentage of inmates with a substance dependence problem within the facilities ranged from 25% to 100%.

Table 2.11

Descriptive Statistics for the Full Sample of State and Federal Inmates in 2004

	Mean	Std.	Min	Max	N
Dependent Variable					
Victim-Offender Status					
Neither (reference)	0.511	0.500	0	1	17794
Victim	0.023	0.151	0	1	17794
Offender	0.356	0.479	0	1	17794
Victim & Offender	0.110	0.312	0	1	17794
Level-1 Covariates					
Chronic Illness	0.394	0.489	0	1	17942
Disability	0.168	0.374	0	1	17964
Homeless	0.082	0.274	0	1	17299
Distance from Home	0.669	0.470	0	1	17326
Any Children	0.700	0.458	0	1	17957
Prior Abuse	0.244	0.429	0	1	17964
Mental Disorder	0.266	0.442	0	1	17881
Substance Depend.	0.671	0.470	0	1	16899
Female	0.214	0.410	0	1	18185
Marital Status	0.814	0.389	0	1	18140
White	0.495	0.500	0	1	18025
Hispanic	0.189	0.392	0	1	18185
Education	0.361	0.480	0	1	18180
Age	35.835	10.511	16	84	18185
Prior Incarceration	0.173	0.378	0	1	17556
Hours in Cell	12.593	5.682	0	24	17703
Time Served	46.487	60.618	0	516	17413
Offense					
Violent Offense	0.427	0.495	0	1	17755
Property Offense	0.231	0.422	0	1	17755
Drug Offense	0.241	0.427	0	1	17755
Public Order	0.101	0.301	0	1	17755
Level-2 Covariates					
Federal Prison	0.203	0.402	0	1	18185
Prop. Older	0.105	0.076	0	0.756	18185
Prop. White	0.495	0.163	0.089	0.900	18185
Prop. Violent	0.423	0.234	0	0.944	18185
Prop. Program	0.692	0.158	0.140	0.981	18185
Avg. Hours in Cell	12.593	2.352	7.784	21.295	18185
Prop. Substance Dep.	0.669	0.122	0.250	1	18185

CHAPTER III: AN AGE-PERIOD-COHORT ANALYSIS OF PRISON MISCONDUCT

Introduction

The imprisonment rate in the United States surpasses that of every other country in the world (Wagner & Walsh, 2016). Over that last four decades the imprisonment rate increased substantially (Cahalan & Parsons, 1986; Carson & Golinelli, 2013). Currently, more than one million offenders are housed in state and federal prisons (Carson & Sabol, 2016). Scholars have endeavored to understand the causes and consequences of the increase in the rate of imprisonment and the growth of the prison population. Some have attributed the rise in imprisonment to changes in the approach to punishing offenders in the United States (Clear & Frost, 2013). Specifically, changes in sentencing practices have been cited as a major cause of the increase in the prison population. Prior to the 1980s, indeterminate sentencing was the dominant sentencing scheme in which judges wielded a great amount of discretion when imposing sentences and the amount of actual time served by offenders was decided by parole boards. In the 1980s, there was a shift towards determinate sentencing, which was motivated by the desire to reduce sentencing disparities and increase the level of incapacitation.

Researchers have worked to explain the cause of the increase in the incarceration rate, but few researchers have examined how inmate behavior may have been effected by changes in sentencing practices and how inmate misconduct may have varied across time. With the movement towards determinate sentencing also came the elimination or restriction of early release and "good time" credit, which may have unintentionally reduced the incentive for inmates to abide by the rules while incarcerated. Traditionally, researchers have focused on the effects of institutional- and individual-level factors on inmate behavior; however, the effect of the sentencing policies has not been fully investigated. Further, it is unknown whether inmates

incarcerated in the 1980s are more likely to engage in misconduct than inmates incarcerated before or after that time period. The 1980s represents that time period in which the "get tough" movement was in full effect and a number of sentencing policies were implemented. This era was marked with rising crime rates, public concern about safety, and political shifts towards being tough on crime (Clear & Frost, 2013). Additionally, major changes to the prison population occurred during this time. Thus, the purpose of the current study is to examine whether the risk of misconduct has changed over time. Specifically, this study investigates how the year of admission to prison, an indirect measure of sentencing, may have impacted inmate behavior. This chapter investigates three central questions: (1) are persons incarcerated in a particular year (e.g., 1980s) at greater risk of misconduct? (2) does the likelihood of misconduct differ by survey year? and (3) does the aging of the prison population effect the risk of misconduct?

Theoretical and Empirical Background

  Sentencing policies. Throughout the 20th century, the incarceration rate in the United States remained relatively stable. Beginning in the 21st century, however, there was a sharp increase in the incarceration rate, as the prison population more than quadrupled from 1974 to 2005 (Bonczar, 2003; Langan, Fundis, Greenfeld, & Schneider, 1988). The dramatic increase has been attributed to rising crime rates and harsh sentencing policies enacted from the mid-1970s. Prior to the 21st century, states operated under indeterminate and unstructured sentencing schemes, which provided little guidance on sentencing decisions (Stemen & Rengifo, 2012; Tonry, 2000). Unstructured sentencing models provide judges with little guidance on what sentences to impose. Indeterminate sentencing refers to a wide range of sentences available to judges to impose for a specific offense (Marvell & Moody, 1996; Stemen & Rengifo, 2012).

Judges also had the discretion to decide whether to impose a term of incarceration, intermediate sanction, or monetary sentence (National Research Council, 2014). Under this sentencing model, few restrictions were placed on judicial discretion. As a result, for two offenders convicted for the same offense, one might be sentenced to incarceration while the other would be sentenced to probation.

Indeterminate sentencing emphasizes the rehabilitation of offenders, stressing the individualization of disposition, which allows judges to consider the specific needs of offenders and the risk they pose to public safety (Tonry, 2000). An advantage of indeterminate sentencing is that it recognizes that each individual is unique and takes into account these differences so that sentences may be tailored to the specific needs of the offender. The key features of indeterminate sentencing are discretionary sentence lengths imposed and discretionary release. For offenders sentenced to prison, the specific date of release is determined by a parole board. The indeterminacy of this sentencing scheme came from the disconnect between the sentence handed down by the judge and the actual time offenders served (Langan, 1991; Stemen & Rengifo, 2012). When a term of incarceration was imposed, the exact prison term was left open, and parole boards determined the date of release.

Both the political left and right opposed this model. Critics of indeterminate sentencing advocated for more consistent sentencing outcomes across jurisdictions (Frase, 1995). A primary criticism of indeterminate sentencing by liberals was that it produced sentencing disparity (Mauer, 2001). Because various factors (e.g., the nature of the crime, effects on the victim, offender characteristics) could be considered when imposing a sentence, different sentences were handed down for offenders who committed similar offenses (Tonry, 2000). Critics also argued

that because of the discretion afforded to judges, biases and stereotypes may influence judicial

decision making.

Conservative proponents of the "get tough" on crime movement opposed indeterminate

sentencing on the grounds that prisoners were not serving an adequate amount of their sentence

because parole boards were releasing them too soon (Marvell & Moody, 1996). Under

indeterminate sentencing, the punishment was intended to fit the needs of the offender rather

than the crime. As such, sentences were viewed as not being reflective of the seriousness of the

crime committed (American Law Institute, 1985). Conservatives also argued that prison was

ineffective at rehabilitating offenders, which was the primary goal of indeterminate sentencing.

This sentiment was fueled by the report produced by Martinson (1974), which concluded that

"nothing worked" and the prison system was ineffective at rehabilitating offenders.

Sentencing reform. In the United States, the 1960s were marked by increased social and

political unrest and rising crime rates. The rise in crime came at a time of increasing social

divisions. Social and political unrest resulted in urban riots and black power movements

(Harmon, 2013b; Mauer, 2001), demonstrations against the Vietnam War, and increasing

negative interactions between protestors and police (National Research Council, 2014). At the

same time crime rates, particularly violent crime rates, began rising and continued rising steeply

through the 1980s to the mid-1990s (National Research Council, 2014). As the crime rate

increased, the public increasingly demanded that lawmakers take a tougher stance on crime (Loo

& Grimes, 2004; National Research Council, 2014).

In 1965 the Law Enforcement Assistance Act was enacted and provided financial

incentives aimed at strengthening crime control efforts by improving and expanding law

enforcement at the state and local levels (National Research Council, 2014). The objectives of

the 1965 act were supported by both sides of the political spectrum. Liberals viewed the act as a way to increase police professionalism and provide uniformity and neutrality in policing and sentencing practices. Conversely, conservatives viewed the expansion of law enforcement and increasing involvement of the federal government as a means of enabling police to deal with the unrest (National Research Council, 2014). The rise in violent crime and social unrest fostered the politicization of crime and served as a catalyst for the "get tough on crime" movement.

The widespread social unrest and increasing crime rates also resulted in the loss of faith in liberalism's ability to ensure public safety (National Research Council, 2014). Furthermore, political pressure from the public affected sentiments about the prevailing sentencing system. In addition to the growing demand for getting "tough" on crime, the shift towards determinate sentencing was also prompted by the belief that prison had no rehabilitative effect (Martinson, 1974), indeterminate sentencing produced sentencing disparities, and offenders were not being sentenced harshly enough. Determinate sentencing is a broad term that refers to "sentencing schemes in which the length of the sentence is fixed by the judge at the time of sentencing, with the maximum term being prescribed by the legislature" (Marciniak, 2016, p. 12). Proponents of determinate sentencing emphasized deterrence, incapacitation, and "just deserts" (Marciniak, 2016; Marvell & Moody, 1996). In the late 1970s, states began to adopt structured sentencing models that were intended to ensure system-level uniformity of both the sentences imposed and the criteria used to determine the disposition (Frase, 1995; Stemen & Rengifo, 2012). Sentencing reforms sought to ensure that imposed sentences were based solely on relevant legal factors such as severity of the offense and criminal history (Engen, 2009). Structured sentencing sought to narrow the discretion of judges by providing a recommended sentence for the "typical" case within the wider sentencing range available to judges. A more structured sentencing scheme

sought to reduce sentencing disparities by providing recommended sentences for all offenses to ensure consistency in sentencing (Stemen & Rengifo, 2012).

By 1984, several states and the federal government had adopted a structured sentencing (or determinate sentencing) model. The defining feature of determinate sentencing was the abolition of discretionary release (Marvell & Moody, 1996). Many states that adopted determinate sentencing abolished parole for all or almost all offenses. The purpose of abolishing discretionary release was to control release decisions and ensure that offenders serve a substantial amount of their prison term. Some states retained indeterminate sentencing without abolishing parole, but substantially limited judicial discretion. Generally, sentencing reforms sought to limit judicial discretion; however, some policies aimed to increase the imprisonment of certain types of offenders or regulate the amount of time offenders served in prison (Engen, 2009).

Although determinate sentencing has been used as a general term to describe a cadre of sentencing policies that were adopted, the specific sentencing policies adopted varied by state. The various policies include presumptive sentencing, sentencing guidelines, mandatory minimums, habitual offender laws, and truth-in-sentencing legislation. It is important to note that each of the following determinate sentencing policies need not replace indeterminate sentencing systems, but rather they can exist in conjunction with them.

Presumptive sentencing. One of the ways structured sentencing has been implemented is in the form of presumptive sentencing. Presumptive sentencing refers to a system that provides judges with a single, narrow range of sentences for each offense or class of offense (Stemen & Rengifo, 2012). Recommended sentences are based solely on the severity of the offense committed. The aim is to guide the duration of the prison term. The "presumptiveness" of this

model comes from the assumption that judges will impose a sentence with the recommended range of years. The purpose of presumptive sentencing is to reduce sentencing disparities by ensuring fair and unbiased dispositions.

Under presumptive sentencing, judges have little discretion and are unable to consider individual characteristics when determining sentencing outcomes. Despite the restrictions on discretion, however, judges may depart from the recommended sentence only for mitigating or aggravating circumstances or by providing formal justification for the departure (Frase, 1995). Any sentences that do not adhere to the recommended range are subject to appellate review (Stemen & Rengifo, 2012). Since the adoption of presumptive sentencing, the Supreme Court has ruled on the constitutionality of upward departures. Specifically, in *Blakely v. Washington* (2004) and *Cunningham v. California* (2007) the Court ruled that the imposition of lengthy sentences that departed from the recommended guidelines was a violation of the Sixth Amendment's guarantee of a right to trial by jury without a finding of punishment-increasing facts by jury. Prior to *Blakely v. Washington* (2004), the presumptive sentencing model gave the authority to make factual determinations needed to enhance sentences to judges rather than a jury (Wool, 2004). These rulings forced states to revise their presumptive sentencing system. In response to the Supreme Court rulings, some states abandoned presumptive sentencing while others revised their sentencing process to require a jury to find aggravating factors to determine sentence enhancement (Stemen & Rengifo, 2012). States that abandoned presumptive sentencing converted their sentencing system from presumptive to an advisory system, which essentially created voluntary sentencing guidelines (Stemen & Rengifo, 2012).

Sentencing guidelines. Structured, determinate sentencing has also been implemented in the form of sentencing guidelines. Sentencing guidelines differ from presumptive sentencing in

several aspects. First, in contrast to presumptive sentencing, which offers a single sentence recommendation, sentencing guidelines are a system of narrow sentence recommendations for each offense that include procedures designed to guide judicial sentencing decisions (Stemen & Rengifo, 2012). Second, under sentencing guidelines, judges consider several factors such as the severity of the offense and the criminal history of the offender rather than just the offense. Third, the guidelines guide both the disposition and the duration of the prison term. Like with presumptive sentencing, judges may depart from the recommended sentence; however, under the sentencing guideline system, there is no legal authority to control or review judicial sentencing departures. Thus, deviations by judges from the recommended range of sentences are not subject to the same scrutiny outlined by *Blakely v. Washington* (2004).

Separate sentencing commissions were created by the state legislature to draft guidelines in order to insulate them from the "get-tough" crime control pressures faced by lawmakers (Stemen & Rengifo, 2012). Although the primary purpose of sentencing guidelines was to reduce sentencing disparities, it also aimed to control the growth of the prison population. Legislative mandates in some states (e.g., Minnesota) required commissions to consider prison resources and capacity, release practices, and cost when formulating the guidelines. Ensuring that sentencing guidelines would not be influenced by public sentiment for more punitive sentences allows judges to consider prison capacity and resources during sentencing (Marvell, 1995). From the 1980s through the 2000s, some states (e.g., Minnesota and Washington) operating under the sentencing guidelines system reduced their prison population despite the upwards trend seen nationwide (Stemen & Rengifo, 2012).

Unlike state sentencing guidelines, the federal guidelines have been widely criticized. The Sentencing Reform Act of 1984 marked the beginning of determinate sentencing and the

abolition of parole at the federal level. The federal version of sentencing guidelines greatly restricted judicial discretion unlike its state counterparts. The guidelines set the minimum and maximum years of imprisonment for each offense. Although the state guidelines promoted the use of non-custodial sentences to avoid prison overcrowding and reduce costs, the federal guidelines focused on reducing sentencing disparities and increasing certainty of incarceration with little consideration for rehabilitation or prison resources (Frase, 1995). Since the goal of the Sentencing Reform Act was incapacitation, greater focus was given to incarcerating offenders rather that controlling the prison population. Because of the strict limitation on judicial departures, rigid mandatory minimums, and sentence enhancements for certain offenses (drug cases in particular), the federal prison population skyrocketed (Carson, 2014).

   Mandatory minimums. Some states adopted mandatory minimum sentencing laws that required a sentence of incarceration for a subset of offenses (e.g., drug or weapons offenses). Mandatory minimum sentencing laws differ from the previously discussed sentencing models in that they target specific offenses, whereas presumptive sentencing and sentencing guidelines provide sentence recommendations for all offenses (Stemen & Rengifo, 2012). The purpose of mandatory minimums is to increase the severity of punishments by requiring that a fixed minimum number of years be served for specific offenses (Stolzenberg & D'Alessio, 1997). Beginning in the 1970s, state legislatures and law enforcement agencies targeted drug offenders as a means of combating the drug epidemic. The war on drugs resulted in a substantial number of drug offenders being incarcerated and for long terms (Mauer, 2001). For example, New York's Rockefeller Drug laws, one of the most punitive set of mandatory minimum laws, imposed mandatory prison terms of 15 years to life for possession or selling of at least two ounces of narcotics (Pfaff, 2015).

Habitual offenders. Mandatory minimum laws also target habitual offenders and impose enhanced penalties. The federal government and several states implemented laws that targeted habitual offenders. States and the federal government augmented the habitual offender laws with "three strikes and you're out" policies. Three strikes are essentially mandatory sentencing laws that require long sentences for offenders who had been previously convicted of a felony (Turner, Greenwood, Chen, & Fain, 1999). Under the three strikes laws, prosecutorial and judicial discretion is severely limited. For cases to which the law applies, prosecutors and judge are required to pursue the case under the three strikes statute (Stolzenberg & D'Alessio, 1997). The scope of three strikes laws vary by states. In some states the law is broad and allows for a second, third, or fourth "strike" for any felony convictions. In other states, the second/third/fourth "strike" is only allowed for repeat violent offenders (Stolzenberg & D'Alessio, 1997). Three strikes legislation target career criminals with the aim of incapacitating habitual offenders and reducing crime rates.

Truth-in-sentencing legislature. A major criticism of indeterminate sentencing was the inconsequential amount of time offenders served in prison (Tonry, 2000). In addition to restricting judicial discretion and sentencing disparities, some states passed laws aimed at ensuring that offenders sentenced to prison served a substantial proportion of their term. Although many states and the federal government abolished parole when determinate sentencing was adopted, some states also passed laws that require offenders to serve a substantial amount of their term imposed (Sabol, Rosich, Mallik-Kane, Kirk, & Dubin, 2002).

Federal initiatives not only encouraged states to incarcerate offenders, but also increase the certainty of the length of time served. The Violent Offender Incarceration and Truth-in-Sentencing (VOI/TIS) incentive grants were part of the amended Violent Crime Control and Law

Enforcement Act of 1994, which provided federal funding from 1996 to 2000 for state and local correctional systems to expand prison capacity and for states to increase the incarceration of violent offenders (Sabol et al., 2002; Turner et al., 1999). The funds were used to expand or build more prisons in order to increase facilities' capacity to house violent offenders. The key requirement of VOI/TIS was that states implement policies that required violent offenders serve at least 85% of their imposed prison term (Sabol et al., 2002). Proponents of truth-in-sentencing argued that tougher punishments and increased certainty of time served would reduce crime rates by incapacitating offenders and deterring potential offenders (Turner et al., 1999).

Table 3.1 presents when each type of sentencing structure was first adopted and how many states adopted each type of policy. For a breakdown of which policies were adopted by each state see Appendix A, which includes the effective dates (and repeal dates in some cases) of each sentencing policy by state. Table 1 shows that by 1990, 37 states were operating under the indeterminate sentencing structure. By 2004, 33 states were still operating under indeterminate sentencing. States began adopting determinate sentencing in 1976. By 1990, 14 states were operating under this sentencing structure. By 2004, 17 states had adopted determinate sentencing. Presumptive sentencing was first adopted in 1965, with 12 states operating under this sentencing structure by 1990. Sixteen states had adopted presumptive sentencing by 2004. Sentencing guidelines were adopted in 1980, and by 1990, 11 states had implemented guidelines. By 2004, 21 states had adopted sentencing guidelines.

Mandatory minimum polices were first adopted in 1973, and by 1996 every state had implemented some form of mandatory minimums. The offense for which mandatory minimums were imposed varied by state and included habitual offenders, drug offenses, weapons possession, drunk driving, and sex offenses (Bureau of Justice Assistance, 1998). Three-strikes

legislation was first adopted in 1985, and by 2004, 25 states had implemented a two-, three-, or

four-strikes law. Truth-in-sentencing legislation was first adopted in 1994 following the Violent

Crime Control and Law Enforcement Act of 1994. By 2004, 24 states had implemented truth-in-

sentencing legislation. With the adoption of determinate sentencing, states began abolishing

discretionary release in 1976 and by 2004, 16 states had abolished parole.

Table 3.1

Number of States Operating Under Each Type of Sentencing Structure[1]

Policy	1st adopted	# of states operating under the policy by 1990	# of states adopted by 2004
Indeterminate sentencing	--	37	33
Determinate sentencing	1976	14	17
Presumptive sentencing	1965	12	16
Sentencing guidelines	1980	11	21
Mandatory minimum[2]	1973	--	50
Two/Three/Four-strikes	1985	2	25
Truth-in-sentencing	1994	--	24
Parole release abolished	1976	6	16

[1] Bureau of Justice Assistance (1998)
[2] By 1996 every state had adopted some form of mandatory minimums for various offenses
(e.g., habitual offender, sex offenses, drug offenses, weapons possession, and drunk driving)

Policy and Mass incarceration

The shift toward "get tough" sentencing policies has generally affected the prison population in two ways: (1) the likelihood of being sentenced to incarceration has substantially increased, and (2) the average amount of time to be served has increased (Blumstein & Beck, 1999; Langan, 1991; National Research Council, 2014). Because more offenders were being sent to prison and had to serve the majority of their sentence, by 1980 the number of admissions surpassed the number of releases resulting in the growth of the overall prison population (Carson & Golinelli, 2013). Langan (1991) found that increases in the rate of admission for every offense accounted for 51% of the admission growth from 1974 to 1986. Furthermore, mandatory minimum sentences, the abolition of discretionary release in many jurisdictions, and the limits on earned good time ensured that a substantial number of prisoners served most if not all of their prison term (Stemen & Rengifo, 2012). From the late 1970s to early 2000s, admissions exceeded releases (Carson & Golinelli, 2013; Langan, 1991).

Research on the effects of sentencing on the prison population. The implementation of rigid sentencing policies and abolition of discretionary release have been cited as the primary cause of the dramatic increase in the prison population. Indeed, since the early 1970s, the prison population has more than quadrupled (Blumstein & Beck, 1999; Carson & Golinelli, 2013). To date, the research investigating the direct impact of sentencing policies on population change are equivocal. Some studies show that changes in sentencing policy led to an increase in the prison population while others indicate either a reduction in the prison population or no effect. For example, Marvell and Moody (1996) found for Indiana only determinate sentencing was associated with prison growth. For several states, determinate sentencing was associated with a reduction in state prison populations (Marvell & Moody, 1996).

In states that only implemented presumptive sentencing or truth-in-sentencing, the prison population grew more than in states with indeterminate sentencing (Harmon, 2013a). Additionally, states that implemented presumptive sentencing in conjunction with either determinate sentencing, truth-in-sentencing, or three strikes laws also saw an increase in the prison population that was greater than in states with indeterminate sentencing (Harmon, 2013a). Conversely, Marvell (1995) and Sorensen and Stemen (2002) found that presumptive sentencing decreased imprisonment. Additionally, Marvell (1995) found that in six of the nine states with sentencing guidelines there was a decline in the prison population. Similarly, Harmon (2013a) noted that of all the types of policies included in the analysis, sentencing guidelines was the only policy adoption to suggest a reduction in imprisonment compared to indeterminate sentencing. Zhang, Maxwell, and Vaughn (2009) found that of the six types of sentencing practices examined, only determinate sentencing had an effect on prison population rates. The authors noted that determinate sentencing was associated with a 6% decrease in prison population rates.

Although sentencing practices have had an impact on the prison population, other factors have contributed to the growth of the prison population and the sustained interest in being tough on crime. One factor that may have contributed to the growth of the prison population is how crime is processed. For example, the probability of arrest increased during this era. Shepard (2002) noted that truth-in-sentencing was associated with an increase in the probability to arrest because law enforcement shared the goals of truth-in-sentencing. Further, in the 1980s and 1990s there was an increase in the "conversion of arrests into commitment to state prison" (Blumstein & Beck, 1999, p. 33). The increase in the rate of commitment to prison per arrests was the result of changes in law enforcement and prosecutorial practices, as well as judicial decision making (Mears & Cochran, 2015). Another contributor to prison growth was the exaggerated belief in

incarceration as an effective tool for reducing crime and recidivism, increasing the levels of retribution and perceptions of safety (Mears & Cochran, 2015). Proponents of the "get tough" movement pushed "lock 'em up" punishment policies that were intended to achieve the expected goals of incarceration. Further, the push for incarceration was justified by the public belief that non-incarcerative sanctions did not work to reduce crime and recidivism (Martinson, 1974; Mears & Cochran, 2015).

Prison Adaptation

Sentencing policy not only affects the makeup of the prison population, it can also affect how inmates behave while incarcerated. As a large number of offenders are being housed in prisons and for long and predetermined sentences, a great deal of attention has focused on how to manage the growing number of prisoners and how prisoners adapt to life in prison. As many facilities began to reach capacity and overcrowding became an issue, prison administrators faced increasing challenges in managing prisoners (Beck & Gilliard, 1995). As such, researchers have studied how offenders adjust to life in prison. Traditional explanations of inmate adaptation focus on the role of the prison environment and the individual characteristics imported into prison. In prison, inmates are socialized into the inmate subculture, whereby they learn the norms, language, beliefs, and roles of inmates (Clemmer, 1940). How inmates respond to the pains of imprisonment is influenced by their experiences in prison and individual characteristics. The two dominant theoretical perspectives used to explain inmate adaptation are deprivation and importation. The deprivation framework posits that the depriving nature of prison elicits certain responses from inmates as they attempt to adjust to prison and pains of imprisonment (Clemmer, 1940; Sykes, 1958). Conversely, the importation framework posits that inmates bring characteristics, attitudes, and beliefs with them into prison. It is these imported characteristics

that influence how they respond to prison (Irwin & Cressey, 1962) (for a detailed discussion of the importation and deprivation frameworks see Chapter 4). Institutional misconduct is one of the factors used to gauge prison adaptation by researchers and prison administrators. The number of rule violations accrued during incarceration is used to gauge how well an inmate has adjusted. Misconduct has received much attention because inmate behavior has implications for both inmates and administrators. Engaging in misconduct effects sentence length and whether inmates are transferred to units with higher security or restrictive housing (Haney, 2003; Houser & Belenko, 2015). Additionally, misconduct can affect prison operations as disruptive inmates may undermine the ability of staff to maintain order, control, and safety within the facility.

Empirical tests of both frameworks find support, indicating that both the prison environment and individual characteristics influence how inmates respond to the strain of prison. Numerous deprivation factors are shown to influence misconduct. For instance, some studies find that prison crowding, defined as "the ratio of inmates to a facility's design capacity" (Wooldredge et al., 2001, p. 205), increases the likelihood of misconduct (Bonta & Gendreau, 1990; Camp et al., 2003). There is also evidence that suggests that inmates in higher security facilities are more likely than those in lower security facilities to engage in misconduct (Sorensen & Cunningham, 2010; Worrall & Morris, 2011). Sentence length and time in prison are also found to be related to misconduct. The findings for sentence length are mixed, with some studies finding a positive relationship (Camp et al., 2003; Morris, Longmire, Buffington-Vollum, & Vollum, 2010), while others found that longer term inmates were less likely to engage in misconduct (Cunningham & Sorensen, 2006a; Sorensen & Cunningham, 2010). Time served in prison is shown to be positively related to misconduct in that as time in prison increases so does the likelihood of misconduct (DeLisi, Berg, & Hochstetler, 2004; Morris & Worrall, 2010).

Importation factors (i.e., inmate characteristics) also influence the likelihood of engaging in misconduct. Age is a robust predictor of misconduct. Younger inmates are more likely to engage in misconduct (Morris & Worrall, 2010; Wooldredge et al., 2001; Wooldredge & Steiner, 2012; Worrall & Morris, 2011). The relationship between race and misconduct is mixed. Some studies found that non-White inmates are more likely to engage in misconduct (DeLisi et al., 2004; Morris & Worrall, 2010) while other studies found either White inmates to be more likely to engage in misconduct (Harer & Steffensmeier, 1996) or no relationship between race and misconduct (Steiner et al., 2014). Some research shows that males are more likely to engage in misconduct (Sorensen & Cunningham, 2010; Steiner et al., 2014). Offense type and criminal history are also related to misconduct. Specifically, violent offenders, compared to other offenders, are more likely to engage in misconduct (DeLisi et al., 2004; Sorensen & Cunningham, 2010). Additionally, inmates with a history of criminality (e.g., prior incarceration) are more likely to engage in misconduct than those with a criminal history (DeLisi et al., 2004; Lahm, 2009b; Sorensen & Cunningham, 2010).

Some of the characteristics that predict misconduct are also associated with sentencing outcomes. For example, mandatory minimum laws targeted habitual offenders and increased the certainty of incarceration. In prison, inmates with extensive criminal histories and a history of incarceration are more likely to engage in misconduct than others. The Violent Offender Incarceration and Truth-in-Sentencing (VOI/TIS) federal initiatives resulted in the increased likelihood of incarceration for violent offenders. In prison, violent offenders, compared to other offenders, are more likely to engage in misconduct. Additionally, the sentencing literature shows that young, male, and Black offenders are more likely to be sentenced harshly (Steffensmeier,

Kramer, & Streifel, 1993; Steffensmeier, Ulmer, & Kramer, 1998). These individuals are also likely to engage in misconduct during incarceration.

   Misconduct and determinate sentencing. Determinate sentencing resulted in a larger proportion of offenders being sentenced to prison with lengthy sentences. Similarly, the war on drugs resulted in an increased number of drug offenders being incarcerated and serving long sentences. The amount of time served also increased with the shift toward determinate sentencing. Under this sentencing scheme, inmates were now required to serve the majority of their sentence. Indeed, the average amount of time served by inmates in federal facilities increased from 1986 to 1997 (Sabol & McGready, 1999). Bales and Miller (2012) noted that an unintended consequence of determinate sentencing and the reduced use of parole may have been the removal of any incentive for inmates not to engage in misconduct. That is, regardless of institutional behavior, inmates were required to serve the majority of their sentence. Thus, determinate sentencing policies resulted in the elimination of reduced sentences for some offenses in exchange for obedience (Emshoff & Davidson, 1987). Following the reduced use of parole in many states and the passing of truth-in-sentencing legislation, the possibility of early release was removed. Indeed, some research shows that inmates sentenced under determinate sentencing were more likely to engage in misconduct in prison (Bales & Miller, 2012). Research shows that the sentencing scheme under which inmates are sentenced may influence behavior in prison. For instance, several studies found that inmates sentenced under the determinate sentencing policy were more likely to engage in misconduct (Bales & Miller, 2012; Forst & Brady, 1983). Additionally, Emshoff and Davidson (1987) found that inmates who were not eligible for "good time" were more likely to engage in misconduct than those who were not affected by elimination of the policy.

Thus, these findings indicate that compared to inmates sentenced under indeterminate sentencing, those sentenced under determinate sentencing schemes are more likely to engage in misconduct. To better understand how sentencing may have affected inmate behavior, the current study examines the likelihood of misconduct among inmates over time. Specifically, the current study aims to better understand whether cohorts of inmates admitted to prison from the early 1900s to 2004 differ in their likelihood to engage in misconduct. Although studies have examined the effects of determinate sentencing on misconduct, to date, cohort effects have not been examined. That is, it is not clear whether different groups of inmates who were admitted to prison in different years differ in their likelihood of engaging in misconduct.

Method

Sample description. The data for the analyses in this chapter are from the *Survey of Inmates in State Correctional Facilities*. Five survey periods (1979 – 2004) were used. The final sample consists of 67,563 state inmates (see Chapter 2 for a full description of the data). All juveniles were removed from the data.

Dependent variable. As noted in Chapter 2, inmates were asked to indicate how many times they had been written up or found guilty of a rule violation. *Frequency of misconduct* measured the number of misconducts reported by inmates and ranged from 0 to 2000.

Independent variables. The independent variables of interest in the current study are age, period, and cohort. Five-year intervals were created for age and cohort, which is consistent with previous APC studies (Mason, Mason, Winsborough, & Poole, 1973; Yang & Land, 2013).[14] The final age variable consists of 13 age groups. *Age* measures inmates' age at the time

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[14] The only exceptions are the first cohort and the last age group. Because so few inmates were incarcerated prior to 1975, all inmates admitted to prison between 1903 and 1975 were collapsed into a single cohort. Few inmates were older than 77, so the last age group is comprised of all inmates age 78 to 89.

of the survey. Inmates' ages range from 18 to 89 years old. *Period* represents the survey years. There are five periods in the data. The *cohort* variable captures the year inmates were admitted to prison. Cohort is comprised of seven cohorts. Inmates in the pooled data were admitted to prison between 1903 and 2004.

  Demographic variables. Several demographic measures that have been shown to be related to misconduct are included (Camp et al., 2003; Gendreau et al., 1997; Steiner et al., 2014; Steiner & Wooldredge, 2014). These include race, sex, marital status, educational attainment, military service, prior incarceration, time served in months, and controlling offense (see Chapter 2 for full descriptions of the measures).

Analytical Procedure

  For the current study, age-period-cohort (APC) analyses were conducted to examine the effects of age, period, and cohort on misconduct in prison. To examine the effects of age (A), period (P), and cohort (C) on misconduct in prison, the synthetic cohort approach is used. This approach allows for the examination of social trends through the use of repeated cross-sectional, nationally-representative surveys (Yang & Land, 2013). In this case, cohorts can be defined by the year in which individuals were admitted to prison. A problem that arises when conducting APC analysis is known as the identification problem, whereby the three effects are linearly dependent (i.e., perfectly collinear), $C = P - A$, and are therefore not estimable (Firebaugh, 1997). Thus, we cannot estimate a regression model with all three variables using the following equation:

$$Y = \alpha + \beta_1 A + \beta_2 P + \beta_3 C + \varepsilon,$$

where Y represents the expected value of the dependent variable, α is the intercept, β_i is the partial slopes associated with age, period, and cohort, and ε is the error term.

Over the last four decades, researchers have attempted to find a solution to the identification problem. Conventional solutions to the identification problem include using proxy variables in place of one of the dimensions; changing the functional form one of the dimensions so that it is nonlinear; and imposing equality constraints (Yang & Land, 2013). The standard approach is multiple classification analysis, which is a constraint-based regression analysis (Mason et al., 1973). The Constrained Coefficients GLIM estimator (CGLIM) approach places an equality constraint on 2 parameters of at least one of the predictors to produce a just-identified model (Mason et al., 1973; Yang & Land, 2013). Because this approach assumes that two categories (or groups) of one of the predictors have the same effect on the dependent variable, Mason et al. (1973) urged the use of a priori knowledge to determine which parameters to constrain because all just-identified models (regardless of which parameters are constrained equal) produce the same goodness-of-fit statistics; however, the estimated coefficients change depending on what constraint is imposed (e.g., A1=A2 versus P1=P2).

Traditionally, researchers have utilized birth cohorts in APC analysis (Ryder, 1965); however, if a person's age and period is known, their birth cohort can be identified, which is the essence of the identification problem. In the current study, however, cohorts are defined as groups of inmates who were admitted to prison in the same year. Thus, age, period, and cohort are not linearly dependent because an inmate's age does not determine when they were admitted to prison and which inmate survey they completed. That is, in a given year any offender age 18 or older can be admitted to prison. Table 3.2 presents the correlations between the three dimensions. The results show that age is weakly correlated to period and cohort, indicating that age, period, and cohort may not be collinear. Table 3.2 does show, however, that period and cohort are strongly correlated. This correlation is not surprising given that when an inmate was

admitted to prison affects which survey period they are in. For example, an inmate who was admitted to prison in 1990 would not have been in either the 1979 or 1986 survey since they were not in prison at the time.

Table 3.2

Correlation Matrix

	1	2	3
1. Age	1.000		
2. Period	0.218***	1.000	
3. Cohort	0.067***	0.893***	1.000
Note. *** p < .001			

Model selection. As previously discussed, cohort and period are almost perfectly correlated. Indeed, preliminary models (not shown) with all three dimensions included yielded extremely large variance inflation factors for period and cohort. Because of this, both measures cannot be included in the model simultaneously. To determine which of the two dimensions to include in the subsequent analyses, I examined graphical relationships between cohort, period, and misconduct. Additionally, I examined the model fit for the age-period and age-cohort models.

Figure 3.1 shows the average number of rule violations for each survey year. Across the survey period, the average number of write ups was greatest in 1986. The 2004 survey period had the lowest mean number of write ups. On average, inmates had about four write ups in 1979, five write ups in 1986, three write ups in both 1991 and 1997, and a little over two (2.42) write ups in 2004.

Figure 3.1. The Average Number of Write Ups by Survey Year

A bar chart showing the Average Number of Write Ups on the y-axis (0 to 6) and Survey Periods on the x-axis: 1979 (~3.9), 1986 (~5.1), 1991 (~2.9), 1997 (~3.0), 2004 (~2.4).
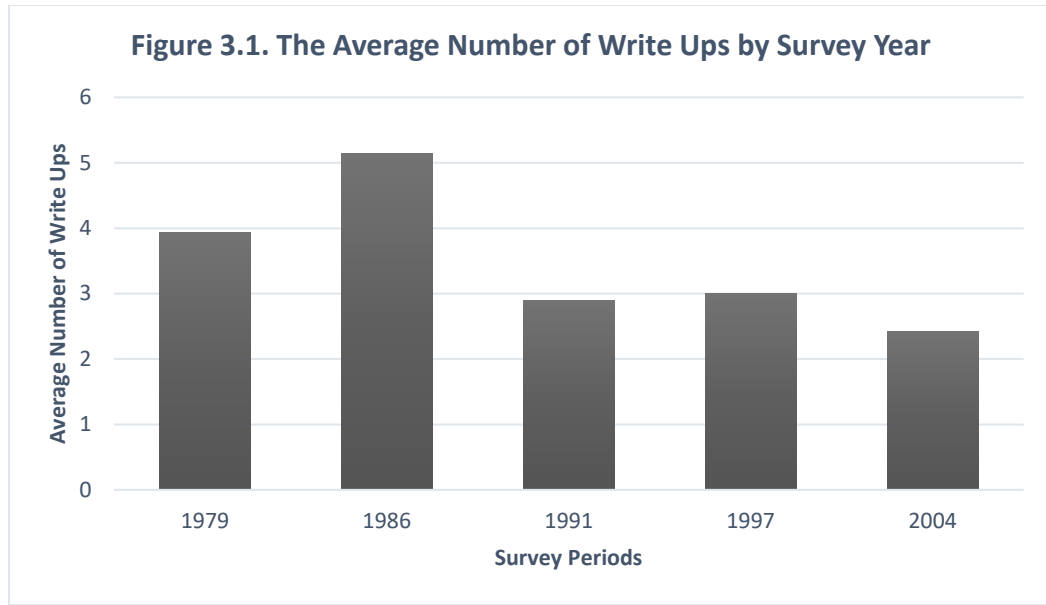
Figure 3.2 shows the average number of write ups across the different age groups. The chart indicates a downward trend in the average number of rule violations. That is, as inmates' age increases, the number of rule violations decreases. This trend is consistent with the misconduct literature that shows that age is negatively related to misconduct.

Figure 3.2. The Average Number of Write Ups by Age Groups

A bar chart showing the Average Number of Write Ups on the y-axis (0 to 5) and Age Groups on the x-axis: 18-21 (~4.5), 22-27 (~4.6), 28-32 (~3.6), 33-37 (~3.0), 38-42 (~2.5), 43-47 (~1.85), 48-52 (~1.45), 53-57 (~1.25), 58-62 (~1.1), 63-67 (~0.7), 68-72 (~0.45), 73-77 (~0.6), 78-89 (~0.05).
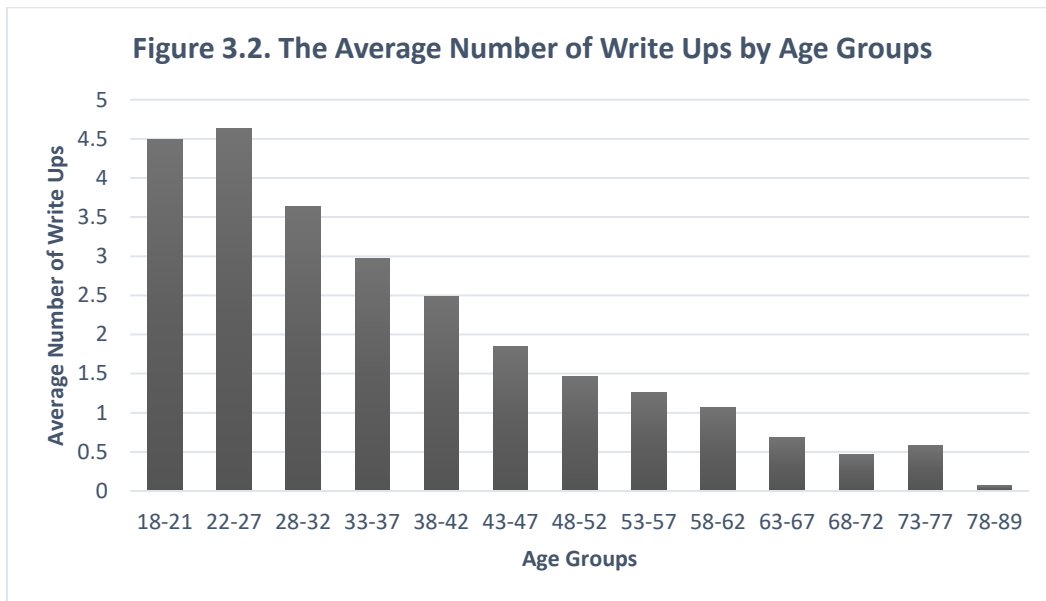
Figure 3.3 shows the average number of write ups for each cohort. The 1903-1975 cohort

had the greatest mean number of write ups. With the exception of the 1981-1990 cohort, the

graph indicates a downward trend in the mean number of rule violations with the last cohort

having the lowest mean number of write ups. The mean number of rule violations declined over

time, with the last cohort of inmates admitted to prison having the fewest average number of rule

violations.

Figure 3.3 The Average Number of Write Ups by Cohort
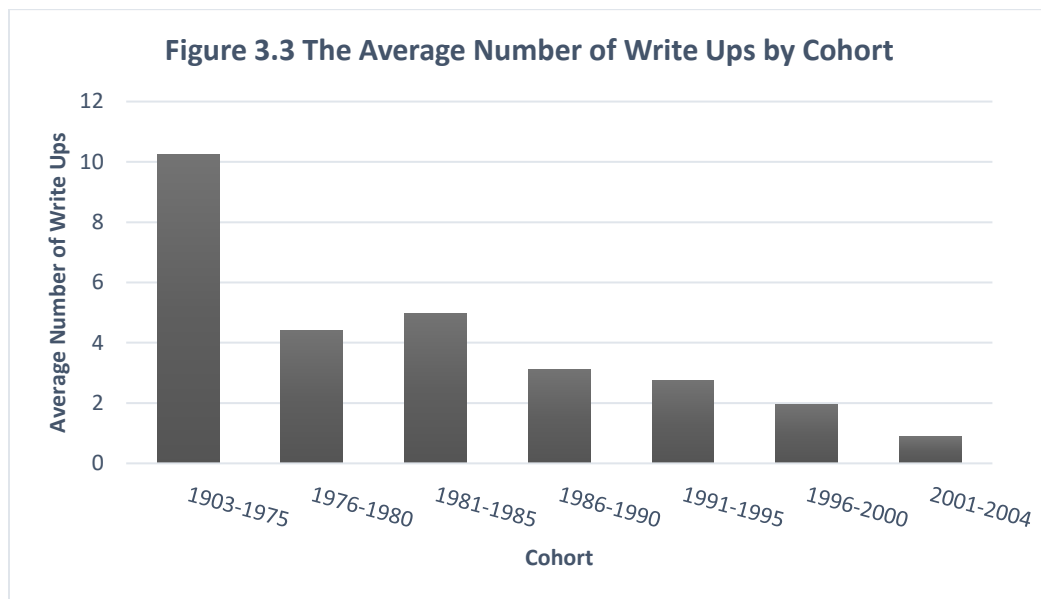
Next, two regression models were run. The dependent variable in this study is *frequency*

of misconduct, which measures the number of times inmates were written up for a rule violation.

The dependent variable consists of count data bounded at zero, therefore the distribution is non-

normal. This distribution shape violates the ordinary least squares assumption of normality

(Hilbe, 2011). Because of this type of data, the most appropriate regression is Poisson regression,

which is a variant of generalized linear models that accommodate count dependent variables. The

main assumption of Poisson regression is that the mean and variance of the Poisson probability

distribution are equal (Hilbe, 2011). One issue that can arise, however, with count data is known as overdispersion, which occurs when the variance of the distribution is greater than the mean (Hilbe, 2011). When overdispersion exists, the Poisson model is not appropriate. Negative binomial regression corrects for overdispersion by fitting a gamma distribution that accounts for the additional unexplained variance in the outcome (Hilbe, 2011). Thus, negative binomial is an extension of the Poisson model that allows for greater variance in the distribution of the outcome.

Several methods were employed to test for overdispersion in the distribution of the *frequency of misconduct* measure. First, the mean and variance of the frequency measure was examined for the inmates. The mean number of misconduct reported was 3.432 with a variance of 318.801 (see standard deviation in Table 2.7). The variance is much larger than the mean, suggesting the presence of overdispersion. Second, the Pearson dispersion statistic was produced. If the value, $\frac{Pearson}{df}$, is greater than1, the data are overdispersed. For the model, the Pearson dispersion statistics was 44.240, indicating that the data are overdispersed.

Third, Figure 3.4 presents probability - probability (P-P) plots that compare the empirical distribution of the observed data to the theoretically specified distribution for the Poisson model predicting the frequency of misconduct and the negative binomial model. As indicated by the figure, the empirical distribution of the observed data in the negative binomial model fits the theoretically specified distribution better than that of the Poisson model. Thus, the negative binomial model was selected for the final analyses.

Figure 3.4. PP Plots Comparing the Fit of the Poisson Model to the Negative Binomial Model
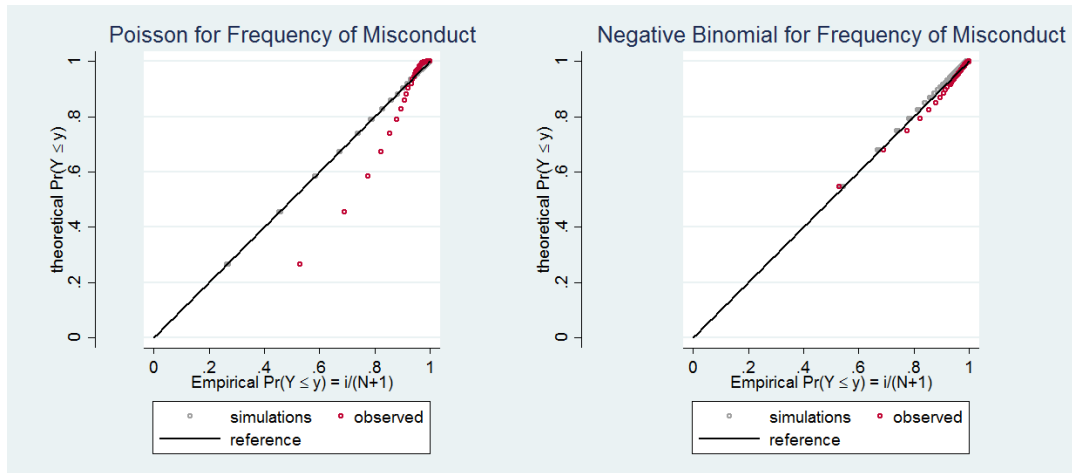
Next, the standard negative binomial model was compared to the zero-inflated negative binomial regression. The zero-inflated model is used to account for the excessive number of observations with a count of zero. This excess of zeroes is thought to be due to two kinds of zeroes: individuals who are "always zeroes" and those who are "not always zeros" (Long & Freese, 2014). That is, there are two processes that could lead to a count of zero. The "always zeros" group is comprised of individuals whose count will always be zero. The "not always zero" group is comprised of a those whose count can sometimes be zero, but can also take on any nonzero value. Figure 3.5 represents the PP plots for the standard negative binomial model and the zero-inflated model. The charts indicated that both models fit that data well.[15] This fit is not surprising given that the difference in the model fit for these two models are generally found to be trivial (Allison, 2012). Thus, the standard negative binomial models are presented in the subsequent analyses. Finally, observations in these data vary in terms of their time at risk. In

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[15] In the current study, there are no "always zero" individuals. That is, all inmates have the potential to engage in misconduct despite differences in time at risk. Thus, the zero counts in the frequency of misconduct measure are not derived through two processes. Based on this theoretical reason the zero-inflated model is not appropriate for these data.

other words, inmates differ in the amount of time served, which in turn affects their opportunity to have been written up for a rule violation. In STATA, the offset option allows for differences in the amount of time served to be taken into account when estimating the model. The results produced represent the rate of misconduct across the period of time served.

Figure 3.5. PP Plots Comparing the Zero-Inflated Model to the Negative Binomial Model
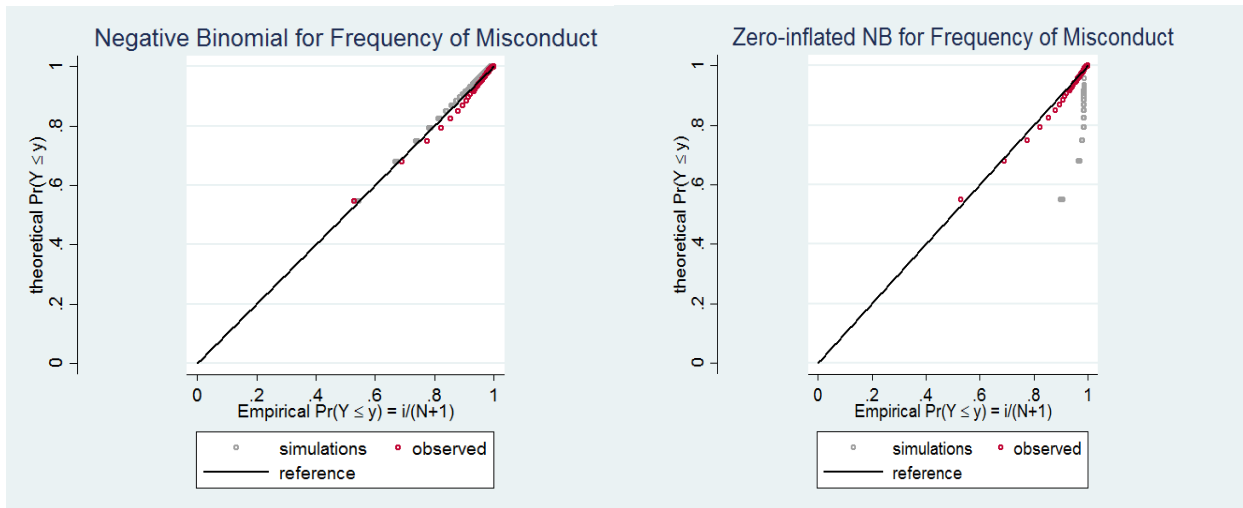
Two negative binomial models were run, age-period and age-cohort, and model fit was compared. Table 3.3 presents the two most commonly used model fit criteria, the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) (Yang & Land, 2013). The AIC and BIC values for the age-cohort model are smaller, indicating better fit. Thus, for the final model presented below, only age and cohort are included.

Table 3.3

Goodness-of-Fit Statistics

	AP	AC
AIC	255129.70	**249855.00**
BIC	255293.70	**250037.20**

Results

      Sample description. The average number of write ups for the sample was 3.432 (see

Table 2.7 for sample descriptive statistics). Table 3.4 presents the frequency of inmates in each

of the age groups and cohorts. The majority of the sample is between 22 and 37 years old. The

largest age group consist of inmates age 22 to 27. Few inmates were in the 63 to 89 age groups.

The 1903 to 1975 cohort had the fewest number of inmates admitted to prison. The majority of

the sample was admitted between 1976 and 1995, with the largest cohort of those being admitted

to prison between 1981 and 1985.

Table 3.4

Descriptive Statistics

Variable	Frequency
Age	
18-21	9569
22-27	15425
28-32	13851
33-37	11077
38-42	7868
43-47	4598
48-52	2502
53-57	1310
58-62	731
63-67	380
68-72	158
73-77	63
78-89	27
Cohort	
1903-1975	2369
1976-1980	11733
1981-1985	13110
1986-1990	11007
1991-1995	10991
1996-2000	9143
2001-2004	8737

Bivariate results. Table 3.5 presents the results of the relationship between age, cohort, and misconduct. Both age groups and cohorts were significantly related to misconduct. The average number of misconducts was greatest for the youngest group of inmates who had a little more than four write ups and decreased as inmates got older. Inmates in the oldest age group had, on average, less than one write up. The oldest cohort (1903-1975) had, on average, the greatest number of misconducts with about 10 write ups. The average number of misconducts declines for each successive cohort from 10 write ups in the first cohort (1903-1975) to less than one write up in the most recent cohort (2001-2004).

Table 3.5

One-Way ANOVA Examining the Relationship Between the
Misconduct and Predictors

	Frequency of Misconduct	
	M (SD)	F
Age		
18-21	4.494 (19.491)	
22-27	4.639 (19.151)	
28-32	3.632 (17.988)	
33-37	2.974 (22.416)	
38-42	2.488 (14.712)	
43-47	1.850 (8.435)	
48-52	1.467 (5.611)	20.73***
53-57	1.264 (5.289)	
58-62	1.069 (8.726)	
63-67	0.689 (2.501)	
68-72	0.468 (1.665)	
73-77	0.587 (1.399)	
78-89	0.074 (0.267)	
Cohort		
1903-1975	10.242 (25.388)	
1976-1980	4.414 (19.265)	
1981-1985	4.987 (29.586)	
1986-1990	3.126 (13.985)	122.58***
1991-1995	2.756 (9.091)	
1996-2000	1.953 (9.452)	
2001-2004	0.885 (5.125)	

Note. *** $p < .001$

Table 3.6 presents the bivariate results of the relationship between misconduct and the demographic variables. The average number of misconducts reported by males was greater than the average number of misconducts for females. Inmates who were not married had a greater average number of misconducts than those who were married. The average number of misconducts for inmates who had less than a high school diploma, were not in the military, and had been previously incarcerated was greater than that of those who had a high school diploma, were in the military, and had not been incarcerated. Across the offense types, violent offenders, on average, had the greatest number of misconducts followed by property, public order, and drug offenders.

Table 3.6

Results Examining the Relationship Between Misconduct and Predictors

		Frequency of Misconduct	
		M (SD)	t or F
Female	Male	3.586 (0.077)	4.247***
	Female	2.860 (0.155)	
Not Married	Married	1.890 (0.070)	-10.736***
	Not Married	3.797 (0.083)	
High School	Less than HS	3.958 (0.097)	9.593***
	HS	2.595 (0.089)	
White	Non-White	3.552 (0.087)	1.642
	White	3.325 (0.108)	
Military	No	3.581 (0.078)	5.124***
	Yes	2.561 (0.114)	
Prior Incarceration	No	2.911 (0.080)	-7.888***
	Yes	4.000 (0.115)	
	Violent	4.823 (23.344)	
Controlling Offense	Property	2.821 (12.353)	142.400***
	Drug	1.312 (7.244)	
	Public Order	1.611 (6.717)	
Note. *** $p < .001$			

Table 3.7 presents the correlation between the frequency of misconduct and the amount

of time served in prison. Misconduct is weakly associated with time served.

Table 3.7

Correlation Matrix

	1	2
1. Frequency of Misconduct	1	
2. Time Served (months)	0.126***	1

Note. *** $p < .001$

Multivariate results. For the multivariate analyses two negative binomial models were

estimated as follows:

$$\eta_i = log(\lambda_i) = \beta_0 + \beta_1(Age_i) + \beta_2(Cohort_i) + r_i$$

and

$$\eta_i = log(\lambda_i) = \beta_0 + \beta_1(Age_i) + \beta_2(Cohort_i) + \beta_3(Female_i) + \beta_4(MaritalStatus_i) + \beta_5(Education_i)$$
$$+ \beta_7(White_i) + \beta_8(PriorIncarceration_i) + \beta_9(TimeServed_i) + \beta_{10}(Property_i)$$
$$+ \beta_{11}(Drug_i) + \beta_{12}(PublicOrder_i) + r_i$$

where the link function is $\eta_i = log(\lambda_i)$ and η_i represents the log of the misconduct rate (or

expected count), and r_i is the error term, which accounts for the unexplained variance (Hox,

2010). β_n represents the expected change in the log misconduct rate corresponding to a predictor

while holding constant other predictors in the model. For example, β_2 in the second equation

represents the expected log misconduct rate for a female inmate compared to a male inmate,

holding constant all of the other predictors.[16] The first equation is the model predicting

misconduct with only age and cohort included as predictors. The second equation includes the

other predictors.

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[16] Both age and cohort were entered into the models as a series of dummy variables.

The results of the negative binomial regression models predicting the rate of misconduct are presented in Table 3.8. The results are presented as incidence rate ratios, which represents the change in the expected rate associated with a one unit increase in the predictor.[17] A series of dummy variables were included for age and cohort.[18] Model 1 shows the effect of age and cohort on misconduct without other predictors in the model. The second column indicates that both age and cohort are significantly related to the frequency of misconduct. Across all age groups, the expected rate of misconduct decreases for inmates in the older age group compared to being in the 18-21 group. For example, the expected rate of misconduct for inmates in the 22-27 group decreased by 36% compared to the expected rate of those in the 18-21 group, holding constant all other variables. The size of the effect for older inmates is the largest. For example, the expected rate of misconduct for in the 78-89 age group decreases by about 99% compared to the expected rate for inmates who are 18-21.

The results for the cohorts indicated that the expected rate of misconduct for all of the cohorts is greater than that of the inmates in the 2001-2004 cohort. For example, the expected rate of misconduct for inmates in the 1903-1975 cohort is 2.182 times the expected rate for the inmates in the 18-21 cohort. The size of the effect for inmates in the 1991-1995 cohort is the smallest, with the expected rate of misconduct for inmates in that cohort being 1.167 times the rate of inmates in the 18-21 cohort. Thus, inmates admitted in the most recent years have lower rates of misconduct than those admitted to prison before them.

Model 2 presents the results of the negative binomial regression that includes the other predictors. The findings for the age groups are consistent with Model 1, with all of the age

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[17] Percentage change calculated as 100*(1 – IRR)
[18] The first age group (18-21) is the reference category. For cohort, the last cohort (2001-2004) is the reference category.

groups having a lower expected rate of misconduct compared to inmates in the 18-21 age group. The smallest decline in the expected rate, compared to the 18-21 group, is observed for the four youngest age groups. For example, the expected rate of misconduct decreased by 37% compared to the expected rate for inmates in the 18-21 group. The size of the effect for older inmates is the largest. For example, the expected rate of misconduct for the 78-89 age group decreases by about 99% compared to the expected rate for inmates who are 18-21.

All but one cohort (1991-1995) are significantly related to the rate of misconduct. Consistent with the results of Model 1, the expected rate of misconduct for all of the cohorts was greater than the expected rate for inmates in the 2001-2004 cohort. Compared to the 2001-2004 cohort, the increase in the expected rate of misconduct is largest for inmates in the oldest cohorts (1903-1975 and 1976-1980). For example, the rate of misconduct for inmates in the 1903-1975 cohort increased by about 61% compared to the expected rate of misconduct for the 2001-2004 cohort.

All of the demographic variables are significantly related to rate of misconduct. For instance, the expected rate of misconduct for females is 1.419 times the rate for males. For those who are not married, the expected rate of misconduct is 1.389 times the rate for inmates who are married. There was a 13% decrease in the expected rate of misconduct for inmates who are White. The expected rate of misconduct for inmates who served in the military is 0.915 times the rate of misconduct for those who did not serve in the military. Having history of incarceration was associated with a 57% increase in the expected rate of misconduct. For each additional month served, the expected rate of misconduct increased by about 9%. Compared to violent offenders, there was a lower rate of misconduct for property, drug, and public order offenders.

The expected rate of misconduct decreased by 5% for property offenders, 32% for drug

offenders, and 19% for public order offenders compared to violent offenders.

Table 3.8

Negative Binomial Regression Predicting the Rate of Misconduct (Exposure Included)

Variable	Model 1		Model 2	
	IRR	95% CI	IRR	95% CI
Age				
22-27	0.637***	(0.608,0.669)	0.629***	(0.599,0.660)
28-32	0.406***	(0.386,0.427)	0.400***	(0.380,0.422)
33-37	0.279***	(0.265,0.295)	0.267***	(0.253,0.281)
38-42	0.219***	(0.206,0.232)	0.213***	(0.200,0.227)
43-47	0.141***	(0.131,0.152)	0.140***	(0.130,0.151)
48-52	0.098***	(0.089,0.108)	0.095***	(0.086,0.105)
53-57	0.075***	(0.066,0.085)	0.074***	(0.065,0.085)
58-62	0.058***	(0.049,0.069)	0.062***	(0.051,0.074)
63-67	0.034***	(0.026,0.044)	0.034***	(0.026,0.045)
68-72	0.030***	(0.019,0.046)	0.033***	(0.021,0.051)
73-77	0.032***	(0.017,0.059)	0.036***	(0.019,0.067)
78-89	0.005***	(0.001,0.027)	0.006***	(0.001,0.033)
Cohort				
1903-1975	2.182***	(1.999,2.382)	1.609***	(1.410,1.707)
1976-1980	2.211***	(2.084,2.345)	1.852***	(1.713,1.945)
1981-1985	1.793***	(1.693,1.899)	1.368***	(1.302,1.479)
1986-1990	1.409***	(1.327,1.496)	1.134***	(1.073,1.222)
1991-1995	1.167***	(1.099,1.240)	0.963	(0.896,1.021)
1996-2000	1.334***	(1.252,1.422)	1.189***	(1.110,1.267)
Female			1.419***	(1.365,1.477)
Not Married			1.389***	(1.334,1.448)
High School			0.942***	(0.913,0.970)
White			0.875***	(0.849,0.906)
Military			0.915***	(0.875,0.963)
Prior Incarceration			1.570***	(1.530,1.630)
Time served			1.085***	(1.064,1.107)
Offense				
Property			0.948**	(0.917,0.988)
Drug			0.683***	(0.656,0.720)
Public Order			0.814***	(0.763,0.872)
Constant	0.158***	(0.149,0.167)	0.096***	(0.088,0.105)
Dispersion Parameter	3.100***	(3.052,3.149)	2.926***	(2.880,2.973)
N	66,570		64,950	

Note. ** $p < .01$, *** $p < .001$

Discussion

How inmates adapt to prison has been the focus of researchers for several decades. Because inmate behavior effects both inmate outcomes and operation management, understanding who is most likely to engage in misconduct and what factors influence this behavior is important. A plethora of research exists that identifies the prison- and individual-level risk factors of misconduct. To date, however, few studies have investigated the impact of sentencing on misconduct and whether inmates entering prison at different points in time differ in how they adjust to prison. The current study extends the literature on prison misconduct by examining age and cohort effects on misconduct. An age-cohort model was estimated to determine to what extent changes in misconduct could be explained age and cohort (the year admitted to prison). These analyses provide several key findings.

The first finding is that age effects explain misconduct, suggesting that a process occurs across the life course that influences that likelihood of misconduct. That is, across all of survey periods older inmates had lower rates of misconduct compared to the youngest age group. The age effects found in the current study are consistent with the age-crime research, which shows that crime peaks in adolescence, then gradually declines over the life course (Farrington, 1986; Gottfredson & Hirschi, 1990; Lauritsen, 1998). In this study, the highest rates of misconduct are found among the younger age groups and declined as inmates got older.

Second, cohort effects can explain misconduct. That is, when inmates entered prison is related to misconduct. The results show that compared to the most recent cohort of inmates admitted to prison, the inmates in the older cohorts had higher rates of misconduct. Bales and Miller (2012) asserted that inmates sentenced under determinate sentencing were more likely to engage in misconduct because they lack any incentive not to violate rules since discretionary

early release was restricted, or eliminated, in many jurisdictions. The findings of this study do not find support for this argument. Specifically, the cohorts admitted in the 1980s and 1990s did have higher rates of misconduct than the most recent cohort; however, across all of the cohorts, the highest rates of misconduct were among those admitted between 1903 and 1980, which was during the time when indeterminate sentencing was the predominant sentencing scheme in the United States.

Research shows that engaging in misconduct effects parole eligibility (Caplan, 2007); therefore, as Bales and Miller (2012) argue, the elimination of early release should be positively related to inmate behavior. The lower rate of misconduct among the inmates sentenced during the era of harsh sentencing practices may be related to how these inmates adapted to prison. The back-end determinate sentencing policies, such as truth-in-sentencing, required inmates to serve a substantial proportion of their sentence. Mandatory minimums and sentence enhancements resulted in longer sentences for habitual offenders, drug offenders, and violent offenders. Further, by 1994 the primary method of release from state prisons was mandatory parole, which is automatic release once the required number of months of the prison sentence is served (Hughes, Wilson, & Beck, 2001). Under these policies, inmates had an explicit release date. Thus, for inmates in the 1980s cohorts, with long sentences ahead of them, they may be more willing or able to adapt to prison.

Previous research on the relationship between sentence length and misconduct suggests that longer sentences are associated with lower rates of misconduct (Cunningham & Sorensen, 2006b; Flanagan, 1980; Jiang & Fisher-Giorlando, 2002). Generally, longer term inmates have lower rates of misconduct than short-term inmates (Cunningham & Sorensen, 2006b; Flanagan, 1980; Morris et al., 2010). For example, Cunningham and Sorensen (2006b) found that long-

term inmates (i.e., serving 20 years to life) were the least likely to be involved in violent misconduct compared to shorter term inmates. Morris et al. (2010) found that the odds of engaging in misconduct were lower for inmates sentenced to capital life compared to shorter term inmates. Additionally, a survival analysis found that shorter term inmates engaged in misconduct sooner (Morris et al., 2010). The previous research suggests that long-term inmates may be better able to cope with prison and avoid serious misconduct for a longer period of time than short-term inmates. Thus, "prisonization and its timing may depend on the amount of time that the inmate will serve (i.e., the type of sentence)" (Morris et al., 2010, p. 429). The shift towards determinate sentencing resulted in longer sentences with inmates being required to serve a substantial amount of time before release (National Research Council, 2014; Stemen & Rengifo, 2012). It is possible that inmates in the current study who entered prison in the 1980s have lower rates of misconduct because they were better able to cope with prison than those admitted to prison before them.

It is important to note that misconduct in the current study is a measure of how many times inmates have been officially written up for a rule violation. The differences in the rate of misconduct across cohorts may be indicative of the willingness of correctional staff to report rule violations. The rapid growth of the prison population may have made it infeasible to detect and/or report all rule infractions. It is virtually impossible to enforce all rule violations, especially given that not all rule breaking is detected by correctional officers. Furthermore, in order to secure compliance and maintain order of prisoners, correctional officers may overlook some rule violations (Hewitt, Poole, & Regoli, 1984; Light, 1990; Poole & Regoli, 1980). Researchers have identified discrepancies between self-report rule breaking and officially reported violations. Several studies examined the divergence between self-report and official

misconduct. For example, Hewitt et al. (1984) found that of the 2,265 rule violations reported by prisoners during the 90-day period, correctional officers reported observing 1,879 (83%) rule violations yet only filed reports for 66 (4%) rule violations. Similarly, Poole and Regoli (1980) found that 91.8% of the sample reported rule violations; however, only 16.5% had an official misconduct record.

Light (1990) identified several sources of measurement error in official misconduct data including detection of violations, correctional officer discretion, definitional issues, and organizational factors (e.g., reporting methods and practices). The discrepancy between rates of self-reported and official misconduct suggests the practice of discretionary rule enforcement by correctional officers as only some of the rule violations that come to the attention of correctional officers are officially filed (Hewitt et al., 1984; Poole & Regoli, 1980). This may be particularly true in facilities operating at or over capacity. The issue of prison crowding garnered much attention from researchers and prison administrators following the increase in the prison population during the "get tough" era (Anson & Hancock, 1992; Cox, Paulus, & McCain, 1984; Martin, Lichtenstein, Jenkot, & Forde, 2012; Paulus, McCain, & Cox, 1973; Ruback & Carr, 1993). In prisons operating over capacity, much like policing in crime ridden areas, correctional officers may be unable to detect rule violations. Where rule violations were detected, correctional officers may have been more selective in the offenses they chose to formally write up due to limited resources available to punish inmates (e.g., space in segregated housing units). Additionally, officers may have been unwilling to report a high volume of violations as this might reflect poorly on their ability to manage inmates in their cell block (Light, 1990). Thus, the inmates in the older cohorts may have been more likely to be written up simply because there were fewer inmates housed in prisons.

Third, the relationship between the demographic variables and misconduct are generally consistent with the previous research on misconduct. Across all survey periods, inmates who were not married, non-White, had less than a high school diploma, and were not in the military had lower rates of misconduct, compared to their counterparts. Inmates who had been previously incarcerated and violent offenders had higher rates of misconduct, compared to their counter parts. These findings are consistent with the previous research on misconduct (Bales & Miller, 2012; Blowers & Blevins, 2015; Camp et al., 2003; Cochran, 2012; Lahm, 2009a; Steiner et al., 2014). Not consistent with the previous literature is the finding for sex. The expected rate of misconduct was greater for females. This finding suggests that prison may affect females differently than males. Indeed, some researchers have called for gender-specific explanations of misconduct (Van Voorhis, Wright, Salisbury, & Bauman, 2010; Wright, Salisbury, & Van Voorhis, 2007; Wright, Van Voorhis, Salisbury, & Bauman, 2012). Although males are generally shown to engage in more misconduct (Celinska & Sung, 2014), the females in these data may be more likely to engage in misconduct because of poorer adjustment to prison than their male counterparts. Prior to the war on drugs, a small number of women were incarcerated in prison (Brown et al., 1996); thus, the increasing number of female offenders in prison resulted in an influx of non-violent females with no history of incarceration. The greater rate of misconduct may represent female inmates' differential response to the shock of prison.

Although there is evidence of a shift away from the punitiveness of the "get tough" era (Clear & Frost, 2013), many inmates are still being sentenced under the various determinate sentencing policies. As such, the cohort findings in this study highlights the need for understanding how sentencing has influenced misconduct. Indeed, the cohort effects indicate that across all survey periods, inmates incarcerated in the earlier cohorts have higher rates of

misconduct. Although there is some evidence that inmates sentenced under determinate sentencing are more disruptive than their counterparts (Bales & Miller, 2012), the differences between the cohorts observed in these data furthers our understanding of misconduct and indicates that in additional to traditional deprivation and importation risk factors, when inmates enter prison and under what policy needs to be considered. Further, the relationship between determinate/indeterminate sentencing and misconduct does not appear to be clear cut.

The current study contributes to the literature on prison misconduct, however, it is not without limitations. First, the data available prevent measuring the specific type of sentencing schemes inmates were sentenced under are not available in the 1976, 1986, and 1991 surveys. As such, the year of admission was used as a proxy. Given that some of the determinate sentencing schemes may have been implemented in conjunction with indeterminate sentencing, identifying the specific sentencing model, or combination of models, can help paint a clearer picture of how sentencing policies have influence inmate behavior. The lack of consistency between the current findings and the research on determinate sentencing and misconduct may be due to the way in which sentencing was measured. For instance, Bales and Miller (2012) utilized data from a single state that allowed them to pinpoint exactly when determinate sentencing was implemented. The authors categorized inmates into groups based on whether they were sentenced before (indeterminate) or after the implementation of determinate sentencing; however, they were unable to identify which inmates were directly affected by severe sentences. Thus, in the current study without state level data there was no way to include direct measures of determinate sentencing. Additionally, because of the use of a single year as the cut point distinguishing indeterminate from determinate sentencing, there is no measure of whether all of

the inmates in the latter group were sentenced under determinate sentencing. Because of this it is still unclear what impact harsh sentences may have had on inmate behavior.

Second, a limitation of the earlier surveys is that the type of misconduct inmates were written up for is not included. Understanding what inmates were written up for may help to further elucidate the differences between the cohorts. It is possible that following the shift in sentencing, correctional officers were more apt to write up serious misconduct, whereas prior to the 1980s and the increase in the prison population, all forms of misconduct resulted in a write up. Additionally, the measurement of misconduct changed from the 1979 and 1986 surveys to the 1991-2004 surveys. In the earlier surveys, inmates were asked if they were formally charged with a rule violation. In the later surveys, the questions were changed to whether inmates were written-up or found guilty of a rule violation. It is possible that inmates were answering two different questions. Being formally charged may simply mean that inmates were officially written up for a violation, but not necessarily found guilty or sanctioned. This difference would explain the higher number of write ups in the earlier survey. Conversely, being "found guilty" implies that inmates were not only written up for a rule violation, but were also sanctioned. As not all rule violations in prison results in some form of punishment, it makes sense that fewer inmates in the more recent cohorts reported misconduct. Since the question in later surveys include both being written up and found guilty inmates may only have referenced those infractions for which they were found guilty. In more recent years when many facilities were operating at or above capacity, correctional officers likely utilized discretion when enforcing rule violations; thus, few inmates may have been found guilty of a rule infraction.

Overall, the findings suggest that changes in sentencing policy influenced behavior in prison. As previously noted, one result of the "get tough" movement was the increase in the

prison population. An interesting finding here are the age effects on misconduct. The next chapter builds on this finding and examines the outcomes of inmates in the most recent cohort. Specifically, the chapter examines whether there are age differences in the predictors of prison misconduct and victimization. Policy implications for the current study are presented in the final chapter.

CHAPTER IV: AGE AND MISCONDUCT AND VICTIMIZATION

Introduction

Some scholars have argued that one of the consequences of longer sentences resulting from "get tough" sentencing strategies is that the prison population is "greying" (Auerhahn, 2014; Human Rights Watch, 2012; Hurley, 2014). That is, as a whole, the prison population is getting older. Overall, the average age of the prison population increased from 31.7 years old in 1993 to 37.8 years old in 2013 (Carson & Sabol, 2016). Over the last decade, the number of older prisoners (age 50 and older) has quadrupled, with older prisoners now comprising about 18% of the prison population (Carson & Sabol, 2016). Between 1995 and 2010, the number of older prisoners grew at a rate seven times that of the overall prison population (Human Rights Watch, 2012). The dramatic increase in the number of older prisoners has largely been attributed to harsh sentencing practices that resulted in a substantial number of offenders being sentenced to serve long sentences. The Human Rights Watch (2012) noted that approximately 41% of state and federal prisoners aged 50 or older are serving between 20 years to life in prison. Furthermore, many prisoners were incarcerated at a much younger age and have aged behind bars.

As the number of older inmates has increased, so has concern for their experiences in prison. Of interest is the misconduct and victimization experiences of older inmates and how they compare to younger inmates. The bulk of the prison misconduct and victimization is focused on the experiences of younger inmates. Indeed, younger inmates have been shown to be more likely to engage in misconduct and be victimized compared to older inmates; however, as the number of older prisoners continues to grow, a better understanding of their unique experiences is needed. The purpose of this chapter is to examine the extent to which younger and

older inmates are victimized and engage in misconduct and whether the risk factors that predict victimization and misconduct are the same for each age group. Specifically, the current study examines the following: (1) what factors predict misconduct and victimization for older inmates, and (2) whether the risk factors for older inmates the same for younger inmates. First, however, a discussion of how we define an "older" prisoner is warranted.

Defining the older prisoner

In the general population, "older" or "elderly" individuals are generally defined as those who are age 60 or older, although this definition ranges from 60 to 70 years old depending on the government agency (Morton, 1992). Within prisons, however, inmates age 50 or older are considered "older" (Hurley, 2014), although there is no consistent definition of what "elderly" or "older" means within the correctional system. Different states as well as the federal government define older inmates as individuals who are 50 or 55 years old or older (Human Rights Watch, 2012). The federal government defines older inmates as those who are 55 years old or older (Morton, 1992). Despite the variation in how the "older" inmate is defined, it is clear that the age used to define this population is much younger than in the general population.

There are several justifications for using an age less than 60 as the cut point for defining older inmates. First, chronological age is only one factor used to define persons as "old," physiology is another factor. As individuals age, physical health declines. Generally, older persons in the general population have excessive chronic health problems, particularly those associated with aging that impair functioning (Morton, 1992). Although inmates already have a high rate of chronic illness, communicable disease, and physical impairment (Maruschak, 2008; Maruschak, Berzofsky, & Unangst, 2015), and are less healthy than the general population, older inmates face even more health challenges (Chiu, 2010; Fazel, Hope, O'Donnell, Piper, & Jacoby,

2001; Human Rights Watch, 2012). According to the Bureau of Justice Statistics, 40% of state and federal prisoners reported a chronic health problem (Maruschak et al., 2015). Of the inmates who reported a chronic health condition, approximately 75% reported entering prison with a chronic condition. Furthermore, prisoners age 50 or older were three times more likely to report a chronic condition than younger inmates. Given their health, an inmate who is 50 years old has the physiology of a person who is chronologically 10 years older (Anno et al., 2004).

Second, inmates age earlier than individuals in the general population, which is related to the experience of living in prison. Imprisonment negatively impacts physical health and the stress of prison affects the aging process. Incarceration can be viewed as a primary stressor (life event), that leads to subsequent secondary, enduring stressors (Thoits, 2010). Primary stressors are events that are first in an individuals' experience and lead to some undesirable outcome (Pearlin, 1989). In this case, the initial stressor is the shock of incarceration. As a result of imprisonment, individuals may experience secondary stressors that might produce stress independent of the primary stressor. Inmates may experience stress as they attempt to cope with the loss of freedom, autonomy, and other liberties; expend effort to avoid confrontation with correctional staff and fellow inmates as they try to survive prison unharmed; worry about financial needs related to family; and other personal circumstances (Anno et al., 2004). All of these factors contribute to inmates' stress.

As noted previously, many offenders have little or no access to adequate health care in the community so they enter prison with preexisting conditions that may have gone untreated. The stress of prison may cause further deterioration of inmates' health. Poor initial health and prolonged duration of stress has detrimental impact on physical health (Thoits, 2010) and accelerates the aging process.

Theoretical and Empirical Background

Prison Adaptation

The stress of prison not only affects physical health, it also impacts behavior. As individuals experiences stress they may employ coping strategies in order to lessen its impact (Pearlin, 1989). Thus, once in prison, inmates must cope with the stress of being incarcerated as well as living in a depriving environment. As such, researchers have studied how offenders adjust to life in prison. Historically, researchers have argued that prison generates certain responses, including violence and misconduct, that are influenced by individual characteristics and experiences in prison (Clemmer, 1940; Irwin & Cressey, 1962; Sykes, 1958). Clemmer (1940) explained that inmates are socialized into the prison subculture through prisonization, the process by which prisoners absorb and integrate the conventions, practices, and culture of the prison.

Prisonization appears to be a way by which individuals adapt to the prison environment. How inmates respond to being in prison is influenced by numerous factors. Generally, two theoretical frameworks have been used to explain inmate adaptation: deprivation and importation. Prison is known to be a depriving institution, one in which inmates attempt to adapt to the strain of institutional life. According to the deprivation model, inmate behavior, including misconduct, is an adaptation to institutional life (Sykes, 1958). Once offenders enter prison, they are stripped of their status as a member of society and certain comforts (Sykes, 1958). Prisoners forfeit their autonomy, a sense of total safety and security, personal identities, access to material goods and services, privacy, heterosexual relationships, unrestricted interaction with family and friends, and many other general comforts of life (Sykes, 1958). These losses of liberties are known as the "pains of imprisonment." Sykes (1958) posited that the pains of imprisonment

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"generate an enormous pressure, which is translated into behavior with all the greater vigor because, like a body of steam under heavy compression with only a few outlets, the body of prisoners is limited in modes of adaptation" (p. 79). One type of behavior that may be influenced by the "pains of imprisonment" is misconduct (Goodstein, Mackenzie, & Shotland, 1984; Ruback & Carr, 1993; Sykes, 1958).

Although the importation framework does not discount the effects of the environment on inmate behavior, Irwin and Cressey (1962) suggested that the deprivation model missed an important element that influences adaptation to imprisonment. They argued that Sykes (1958) ignored the fact that inmates bring values and identities with them into a facility. The prison subculture is presumed to consist of the same value system that inmates possess outside of prison. That is, the inmate code is simply the code of the streets. Irwin and Cressey (1962) developed an "importation" model to explain how offenders shape prison culture. The importation model views inmate organization and conduct as a reflection of the values and behavioral repertories that offenders bring with them into the prison (Irwin & Cressey, 1962).

Institutional misconduct. One of the ways researchers and prison administrators gauge how well prisoners have adapted to life in prison is by measuring the number of rule violations (i.e., misconduct) inmates accrue during incarceration. Misconduct refers to the "failure to follow explicit rules" (Camp et al., 2003, p. 504). Typically, prisoners with a large number of rule violations are viewed as having poorly adjusted to prison (Cochran & Mears, 2017). The extent of misconduct varies across studies with estimates ranging from as low as 3% (Camp et al., 2003) to upwards of 54% (Jiang & Fisher-Giorlando, 2002; Morris & Worrall, 2010; Steiner & Wooldredge, 2009a). Moreover, the extent of misconduct varies by type. For example, Steiner and Wooldredge (2009a) reported that 16% of misconduct were assaults, whereas 38% were

non-violent. Similarly, Jiang and Fisher-Giorlando (2002) found that 28% of misconduct was violent compared to 72% that was non-violent. Despite the variation in estimates, it is clear that a substantial proportion of inmates accrue misconduct during incarceration.

Generally, empirical tests show support for both theoretical frameworks, with both individual-level characteristics and the prison environment predicting misconduct in prison. Misconduct has implications for inmates and prison administrators. Those who engage in misconduct face disciplinary action that include added time to their sentence, transfer to higher security, or placement in solitary confinement, which is associated with a host of negative consequences (Cochran, Toman, Mears, & Bales, 2017; Haney, 2003; Houser & Belenko, 2015). Inmates with a history of institutional misconduct are also less likely to be granted parole, resulting in more time spent behind bars (Caplan, 2007). In addition to negative consequences for inmates, misconduct also affects prison operations. In short, disruptive inmates undermine correctional staff's ability to ensure order and safety. Although there is an abundant amount of research on institutional misconduct, it is still unclear how older inmates respond to life in prison and whether the factors that influence older inmates' behavior are similar to that of younger inmates.

Deprivation theory. Prison-level factors can elicit negative responses from inmates as they attempt to adjust. Because of the growth in the prison population, numerous studies have been produced that examine the effects of prison crowding, defined as "the ratio of inmates to a facility's design capacity" (Wooldredge et al., 2001, p. 205). The growth in the prison population outpaced the construction of new facilities, resulting in a substantial number of facilities operating at or above capacity. Prison crowding undermines administrators' ability to effectively manage inmates and maintain order and safety within a facility. Furthermore, psychologists

argue that crowding creates harsh living conditions that produce negative affect. Inmates housed in crowded conditions experience depression, stress, and anxiety (Bonta & Gendreau, 1990; Cox et al., 1984; Paulus et al., 1973). Some researchers have found that prison crowding is associated with an increased likelihood of inmate misconduct (Anson & Hancock, 1992; Camp et al., 2003; Gaes & McGuire, 1985; Wooldredge et al., 2001), whereas others found that crowding had little or no impact on misconduct (Franklin, Franklin, & Pratt, 2006; Gendreau et al., 1997; McCorkle, Miethe, & Kriss, 1995; Useem & Reisig, 1999). A meta-analysis of 26 empirical studies by Bonta and Gendreau (1990) indicated that the effects of prison crowding on misconduct varied substantially across studies.

The research on inmate custody level and facility security level is mixed. It is still unclear how custody level impacts inmate misconduct. For instance, several studies found that being housed in higher security facilities was associated with more misconduct (Huebner, 2003; McCorkle et al., 1995; Sorensen & Cunningham, 2010; Worrall & Morris, 2011). Similarly, Berk and de Leeuw (1999) and Camp et al. (2003) found that having a higher custody score as well as being housed in a facility with inmates with high custody scores were positively associated with misconduct. Conversely, Cao, Zhao, and Van Dine (1997) found no relationship between custody level and misconduct, whereas others have found an inverse relationship (Berecochea & Gibbs, 1991; Ruback & Carr, 1993).

Correctional staff characteristics and facility design have also been shown to affect inmate misconduct. For instance, Camp et al. (2003) found that being in a facility with a higher percentage of female and White staff were significantly associated with an increased likelihood of misconduct. Additionally, the authors found that in facilities where a higher number of staff are inexperienced (i.e., one year or less tenure) the likelihood of misconduct was greater. The

staff measures were positively associated with accountability and security-related misconduct. The findings suggest that in facilities where there is a large percentage of staff who are female, white, or inexperienced the typical inmate is more likely to be convicted (i.e., formally written up and sanctioned). The limited research on prison architecture suggests that the design of the facility may influence inmate behavior. Morris and Worrall (2010) reported that prison architecture is related to some types of misconduct. For example, being housed in the more restrictive telephone pole style units was negatively associated with property and security-related infractions, whereas being housed in the less restrictive campus style units was positively associated with property and security-related infractions.

The effects of gang membership and time in prison on misconduct have also been explored. There is consistent evidence that gang membership increases the likelihood of misconduct (Cunningham & Sorensen, 2006a; DeLisi et al., 2004; Sorensen & Cunningham, 2010). The findings of the effects of sentence length on misconduct is mixed. Several studies reported a positive association between sentence length and misconduct (Camp et al., 2003; Jiang & Fisher-Giorlando, 2002; Morris et al., 2010; Toman, Cochran, Cochran, & Bales, 2015), while others found that longer-term inmates are less likely to engage in misconduct (Cunningham & Sorensen, 2006a; Lahm, 2009b; Sorensen & Cunningham, 2010). DeLisi et al. (2004) reported null effects in regard to the relationship between sentence length and misconduct. Time served, however, has been shown to be associated with increased likelihood of misconduct (DeLisi et al., 2004; Morris & Worrall, 2010). For both sentence length and time served, it may be that as inmates spend more time in prison, they have more opportunity to accumulate infractions.

Importation theory. Inmate characteristics also influence how they adapt to prison. Age is one of the most robust individual-level predictor of inmate misconduct. The research consistently finds age to be negatively associated with misconduct (Camp et al., 2003; Cochran & Mears, 2017; Franklin et al., 2006; Gendreau et al., 1997; Morris & Worrall, 2010; Sorensen & Cunningham, 2010; Wooldredge, 1994; Wooldredge et al., 2001). That is, younger inmates are typically more likely to engage in misconduct compared to older inmates. The lower levels of misconduct among older inmates are thought to reflect differences in adaption, in that older inmates, particularly those incarcerated for a substantial amount of time have fewer difficulties navigating prison life (Cochran & Mears, 2017). The findings for other importation factors, however, are mixed.

Race and sex have been linked to misconduct, although the direction of the relationship is different across studies. Several studies found that compared to White inmates, non-White inmates are significantly more likely to engage in misconduct, particularly violent acts (DeLisi et al., 2004; Harer & Steffensmeier, 1996; Morris & Worrall, 2010; Wooldredge et al., 2001). Harer and Steffensmeier (1996) reported that while Black inmates were more likely to be violent in prison compared to White inmates, Black inmates were less likely to have a drug violation than White inmates. Steiner et al. (2014) found that in the majority of studies examining the relationship between race and misconduct between 1980 and 2013 included in their systematic review, race was not significantly related to inmate misconduct. Sex is also linked to misconduct. Some studies found that females were less likely to engage in violent misconduct compared to males (Sorensen & Cunningham, 2010). In their systematic review of 20 misconduct studies, (Steiner et al., 2014) reported that of the 52 models reported, 50% found sex to have no effect on

misconduct, 27% reported females being more likely to engage in misconduct, and 23% reported that females were less likely to engage in misconduct.

Generally, high educational attainment (Cao et al., 1997; DeLisi et al., 2004), being married (Jiang & Fisher-Giorlando, 2002; Jiang & Winfree, 2006; Morris & Worrall, 2010), and employment prior to incarceration have all been shown to attenuate the likelihood of misconduct. Victimization history is also linked to misconduct, with inmates who have a history of abuse being more likely to engage in misconduct (Steiner et al., 2014; Wooldredge & Steiner, 2009; Wright et al., 2007; Wright et al., 2012).

The effects of mental illness on inmate behavior has also been studied. Studies consistently show that prisoners with a mental disorder are more likely to engage in misconduct than their non-disordered counterparts (Friedmann, Melnick, Jiang, & Hamiliton, 2008; Houser & Belenko, 2015; Houser, Belenko, & Brennan, 2012; McCorkle, 1995). Compared to other inmates, those with mental disorders have greater difficulty adjusting to prison life. Impaired cognitive functioning can impede prisoners' ability to effectively cope with imprisonment and any problems that arise during their incarceration. Research shows that prisoners with mental disorders display more maladaptive behavior while confined than those without mental illness (Toch & Adams, 2002).

The relationship between offense type and misconduct has also been explored. Specifically, there is evidence to suggest that violent offenders (i.e., those serving time for a violent offense) are more likely to be violent inside of prison than other offenders (Gendreau et al., 1997; Jiang & Fisher-Giorlando, 2002; Jiang & Winfree, 2006). Other studies have not found support for this relationship (DeLisi et al., 2004; Wooldredge et al., 2001). Sorensen and Cunningham (2010) reported that compared to inmates convicted of a violent offense, those

convicted of property, drug, and public order offenses were more likely to engage in violent

misconduct. Prior criminality is also positively associated with inmate misconduct. In particular,

inmates with more extensive criminal histories are more likely to have rule infractions.

Additionally, a history of prison incarceration (DeLisi et al., 2004; Jiang & Winfree, 2006;

Lahm, 2009b; Sorensen & Cunningham, 2010) and prison rule infractions (Camp et al., 2003)

also increases the likelihood of misconduct. Others report opposite or null effects (Cao et al.,

1997; Wooldredge, 1994).

Victimization in prison

Although offending in prison poses significant challenges to operational management,

prison administrators are also concerned about the victimization of inmates. Prison is a violent

place and inmates are at risk of experiencing some form of victimization during incarceration.

Indeed, research shows that a substantial number of inmates experience some form of

victimization during incarceration (Copes, Higgins, Tewksbury, & Dabney, 2011; Maitland &

Sluder, 1998; Perez, Gover, Tennyson, & Santos, 2010; Schnittker & Bacak, 2015; Wolff & Shi,

2009; Wooldredge, 1994).

Victimization in prison can have serious, long-term consequences, including physical,

psychological, and health consequences. Furthermore, victimization in prison is linked to

negative mental health outcomes (Listwan, Colvin, Hanley, & Flannery, 2010; McGuire, 2005;

C. Struckman-Johnson & Struckman-Johnson, 2006). Being victimized can also affect inmate's

behavior in prison. Behavioral changes are likely related to inmates' perceptions of safety (Perez

et al., 2010). For prisoners, anxiety and fear of re-victimization may result in self-guardianship

behavior, including lashing out at others to prevent further victimization (McGuire, 2005), which

is likely to result in a write up for a rule infraction.

Research shows that physical and property victimization are the most commonly reported forms of victimization by inmates. For example, Wolff et al. (2009) found that approximately 35% of the males in the study experienced physical victimization during a 6-month period. Similarly, (Perez et al., 2010) found that 32% reported experiencing victimization within the past year. Other estimates of physical victimization range from 36 percent (Copes et al., 2011) to 66 percent (Wolff & Shi, 2009). Wooldredge (1994) found that 20% of inmates in the study reported being a victim of a property crime. Similarly, Lahm (2009c) reported that 25% of the study sample experienced property victimization. In addition to experiencing victimization, inmates also witness victimization while incarcerated (Daquin et al., 2016).

Although less common, sexual victimization is still prevalent in prisons. National estimates have been produced indicating that 4% of the nation's prisoners report experiencing some form of sexual victimization (Beck et al., 2014). Other studies utilizing smaller samples have yielded estimates ranging from 5% to 22% (Hensley, Koscheski, & Tewksbury, 2005; Hensley et al., 2003; Krienert & Fleisher, 2005; C. Struckman-Johnson & Struckman-Johnson, 2002; C. Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson, 1996). Despite the variation in the prevalence estimates for the different types of victimization, it is clear that inmates face a real risk of being victimized in prison.

Risk factors of prison victimization. Despite prison administrators' charge to protect inmates, victimization in prison still occurs, likely because inmates are importing with them characteristics that lead to victimization and because of the depriving environment of the prison. Similar to misconduct, individual- and prison-level factors predict inmates' risk of experiencing victimization. The two dominant models, deprivation and importation, have also been applied to the study of prison victimization.

In addition to the deprivation and importation frameworks, the lifestyles/routine activity framework is also relevant to the study of prison victimization. Over the past four decades, the lifestyle/routine activity theoretical frameworks have dominated the study of victimization. The lifestyles model emphasizes the role of lifestyle on one's exposure to "high risk times, places, and people" that places individuals at risk of being victimized (Hindelang, Gottfredson, & Garofalo, 1978, p. 245). Thus, engaging in risky behaviors increases the likelihood of victimization. Routine activity theory is the macro-level counterpart to lifestyle that posits that victimization will occur when three elements – motivated offender, suitable target, and lack of capable guardians – coalesce in space and time (Cohen & Felson, 1979). Accordingly, the lifestyles/routine activity model argues that engaging in risk behaviors increases individuals' vulnerability to victimization by increasing target suitability, placing them in the proximity of motivated offenders without capable guardians. Drawing on the three theoretical perspectives, it is important to consider the impact of the prison environment, guardianship, and individual characteristics on victimization.

Prison environment/deprivation. Generally, the extant research shows that the prison environment affects inmates' risk of victimization. For example, the security level of the correctional facility as well as sentence length have been shown to predict victimization. Inmates in high-security facilities have higher rates of victimization (Hensley et al., 2005; Perez et al., 2010; Wooldredge & Steiner, 2012). High-security facilities house inmates with other individuals who have a higher propensity for crime, thus resulting in an increase in the likelihood of victimization by placing inmates in proximity to motivated offenders. Some research shows that sentence length is positively correlated with victimization (Perez et al., 2010; Wooldredge, 1998; Wooldredge & Steiner, 2012). The longer inmates spend in prison, the more they are

exposed to potential offenders. Population size of a prison has been found to be positively associated with the risk of victimization. In prisons with a large population, the risk of victimization is greater compared to prisons with smaller population size (Wooldredge & Steiner, 2012, 2013).

The characteristics of inmates housed in a facility are also linked to victimization risk. For example, Lahm (2009c) found that as the proportion of non-White inmates in a facility increased, the likelihood of experiencing property victimization increased. Being housed in a facility with a higher proportion of violent offenders or inmates who have been charged with a major rule violation significantly increases the risk of violent victimization (Teasdale et al., 2016). Additionally, residing in a male facility was associated with an increased likelihood of victimization (Teasdale et al., 2016).Thus, the characteristics of inmates within a facility affects individuals' risk of victimization by increasing their exposure to potential offenders.

Inmate perceptions are also associated with victimization. Perceptions of safety are negatively associated with the likelihood of experiencing victimization (Perez et al., 2010). That is, as inmates' perception of safety increases (i.e., they feel more safe), the likelihood of victimization decreases. Additionally, as perceptions of correctional officer fairness increases, the likelihood of victimization decreases (Wooldredge & Steiner, 2013). Correctional officer perceptions of rule enforcement have also been examined. Wooldredge and Steiner (2013) found that as a greater number of officers agree that the rules are under-enforced, the likelihood of victimization increased. This finding suggests that in facilities where officers are unwilling or unable to enforce rules, inmates are particularly vulnerable to victimization.

Guardianship. Researchers have also identified factors that may protect inmates from victimization. For instance, participation in activities (e.g., programs, recreation, and work

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assignments) is linked to victimization risk, although the direction of this relationship varies by type of victimization. Participation in structured activities is positively associated with property crime (Perez et al., 2010; Wooldredge, 1998). Time spent in programs (e.g., education or vocational training) means that inmates are away from their belongings, which provides the opportunity for others to take them. In contrast, participation in programs places inmates in the vicinity of capable guardians, which reduces their risk of physical victimization (Wooldredge & Steiner, 2012), whereas activities that takes inmates away from correctional officers increases their exposure to motivated offenders, and thus the likelihood of physical victimization (Wooldredge, 1994). One of the pains of imprisonment experienced by inmates is the loss of material goods. A response to this loss may be taking other inmates property, particularly if the property is left unattended while inmates participate in programs. Thus, program participation reduces the risk of personal victimization, while at the same time increasing the risk of property victimization.

Target suitability/importation. Inmate characteristics also affects the risk of victimization. Certain inmates are more vulnerable to victimization. For instance, age is one of the most robust predictors of prison victimization, with younger inmates being more likely to experience victimization (McCorkle, 1992; Wolff et al., 2009; Wooldredge, 1994, 1998; Wooldredge & Steiner, 2012). The relationship between race and victimization is mixed. Some studies found that non-White inmates are less likely to be victimized than other inmates, with higher rates of inmate-on-inmate victimization among White inmates (Lahm, 2009b; Wolff et al., 2009; Wooldredge & Steiner, 2012). In contrast, others found the rate of victimization higher for non-White inmates (Perez et al., 2010; Wooldredge, 1994). The relationship between race and victimization remains unclear. Some suggest that Black inmates may have lower odds of

victimization because of the greater levels of solidarity and cohesiveness among this group in prison compared to White inmates (J. B. Jacobs, 1979). This cohesion may serve as protection from victimization. Conversely, the inmate subculture is thought to be analogous to the code of the street (Irwin & Cressey, 1962). Mass incarceration has resulted in a disproportionate number of Black offenders from disadvantaged neighborhoods residing in prisons. Within these neighborhoods a subculture exists. The code of the street is a subcultural value system that condones, and may even require, violent responses to interpersonal transgressions (Anderson, 1999). Given that inmates import attitudes and beliefs into prison, those who adhered to the code of the street in the community are likely to engage in violence while incarcerated (Mears, Stewart, Siennick, & Simons, 2013). To the extent that Black inmates are more likely to adhere to the code of the street than White inmates, it may increase the risk victimization as a result of retaliation by others.

Sex is also a predictor of victimization. Male inmates report higher rates of victimization than their female counterparts (Perez et al., 2010; Wolff & Shi, 2009). The inmate subculture differs for males and females. The female inmate subculture is generally communal and family-oriented (Kruttschnitt & Gartner, 2005), whereas the male inmate subculture is more competitive and organized in pseudo-political units (Pollock, 2002). In prisons, victimization may occur as the result of conflict with others, but males may be particularly vulnerable because of the subculture within male facilities. The nature of the subculture may increase the risk of victimization by influencing the level of guardianship and exposure to motivated offenders.

Some physical and psychological characteristics are also linked to victimization risk. For example, inmates with small stature are at an increased risk of victimization (Teasdale et al., 2016; Tewksbury, 1989). Prisoners with mental illness are also particularly vulnerable to

victimization, with inmates with mental disorders reporting higher levels of victimization compared to other inmates (Austin, Fabelo, Gunter, & McGinnis, 2006; Blitz, Wolff, & Shi, 2008; Pare & Logan, 2011; Schnittker & Bacak, 2015; Teasdale et al., 2016). Inmates in these vulnerable populations may be targeted because it is easier to manipulate and exert control over them.

Age-specific risk factors

Despite the national attention on the "graying" of the prison population, little is known about the unique experiences of older prisoners. As previously noted, the prison literature shows that younger inmates are more likely to engage in misconduct and experience victimization compared to older inmates. Although research suggests that older inmates are less likely to experience these outcomes, some older inmates do engage in misconduct as well as experience victimization during incarceration. What remains somewhat unclear is what factors predict these experiences among this subset of the prison population.

Age and misconduct. To date, the few studies that have examined age differences in misconduct have focused solely on importation and deprivation factors (Blowers & Blevins, 2015; Hilinski-Rosick & Freiburger, 2016). Generally, the literature shows that both deprivation and importation are important; however, predictors vary across groups. For example, Blowers and Blevins (2015) found that prior incarceration and recreation were significantly and positively associated with misconduct, but only for older inmates. Conversely, having a mental illness and participation in vocational programs significantly increased the likelihood of misconduct for younger inmates. These findings suggest that some factors may differentially affect the risk of engaging in misconduct for different age groups.

One aspect of old age that has not been considered is inmate health and functioning. Prisons are designed for young, able-bodied inmates; however, as inmates age in prison physical functioning may decline. As physical health declines, older inmates may have increasing difficulty navigating prison life, particularly when it comes to prison activities of daily living (PADLs) (e.g., standing in line, climbing onto a bunk). Impaired physical and cognitive functioning may make it difficult for older inmates to reside in the general population and increase the risk of both misconduct and victimization. Blowers and Blevins (2015) noted that compared to younger inmates, older inmates were more like to be written up for minor misconduct (e.g., disobeying orders, being out of place). These minor infractions may be the result of older inmates' inability to perform certain tasks. For instance, inmates who suffer from severe arthritis may be unable to stand for extended periods of time or drop to the ground quickly. Thus, physical impairments may cause older prisoners to be written up because they are unable to respond quickly. Being old and having poorer physical health may also result in increased levels of frustration among older inmates that result in them acting out in ways that lead to an official write up for misconduct.

Age and victimization. Also tied to their behavioral response to prison is victimization in that older inmates may act out their frustration and anger as a result in being victimized. Older inmates may be uniquely vulnerable to victimization and these experiences may shape their behavior in prison. Just as functioning and health may shape the behavior of older inmates, these factors can also increase the risk of victimization. The literature on the victimization of older inmates is scant; however, Kerbs and Jolley (2007) examined the victimization experiences of older inmates and offered unique insight. First, the authors found that older inmates reported being targeted by younger inmates. Second, a substantial proportion of the sample reported some

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form of psychological, property, or physical victimization. Many inmates in the sample reported

the loss of property as the result of being physically unable to secure their personal items. For

example, several inmates noted that due to poor eyesight they were unable to negotiate the

combination locks provided; thus, they were forced to leave their belongings unsecured when

they were away from the cell. Additionally, the most common form of physical victimization

reported resembled bullying. Specifically, older inmates reported that younger inmates

physically assaulted them in order to assert dominance or "do masculinity." Older inmates are

vulnerable to victimization by others because they are viewed as weaker and easy to manipulate

(Hurley, 2014; Kerbs & Jolley, 2007).

Although the study by Kerbs and Jolley (2007) offer some insight into the victimization

experiences of older inmates, our understanding of the victimization of this group of inmates is

still unclear. First, their study only included the narrative of 65 inmates age 50 or older. Second,

apart from physical characteristics, it is unclear from the findings which deprivation or

importation factors influence the risk of victimization for older inmates and how it compares to

the risk factors for younger inmates. Thus, a better understanding of the older inmates'

victimization experiences as well as their behavior in prison is needed. As more inmates age in

prison or enter at an older age, research on how they adapt to prison is needed, especially since

inmate behavior has significant ramification for the management of inmates, order and safety

within facilities, and institutional costs.

Method

For the analyses examining age differences in the predictors of misconduct and

victimization, data from the 2004 *Survey of Inmates in State and Federal Correctional Facilities*

(SISFCF) were used (see Chapter 2 for a full description of the data). All state and federal inmates were included in the analyses (N = 326, n = 18,185).

Dependent variables. The two outcomes of interest in this chapter are misconduct and victimization. As noted in Chapter 2, inmates were asked to indicate if they had been written up or found guilty of a rule violation for the following: drug violation, alcohol violation, possession of a weapon, possession of stolen property, possession of other unauthorized substance or item, verbal assault of a staff member or another inmate, physical assault of a staff member or another inmate, escape or attempted escape, being out of place, disobeying orders, and other major or minor violations. Additionally, inmates indicated the number of times they were written up or found guilty for each type. An additive measure was created by summing the number of times inmates reported being written up for each type of rule violation. The range of the *frequency of misconduct* measure is from 0 to 399 write ups. *Victimization* is a binary indicator (0 for no and 1 for yes) that assessed whether inmates indicated being intentionally injured since admission to prison.

Individual-level independent variables (Level-1). The purpose of this chapter is to examine whether there are age differences in the predictors of misconduct and victimization. Thus, to examine these relationships separate models were produced for each age group. The continuous measure of age was dichotomized so that 0 represents younger inmates (age 49 or younger) and 1 represents older inmates (age 50 or older).

To measure physical functioning, measures of chronic illness and physical disability were created. Inmates were asked to report whether they currently had any of the following chronic illnesses: diabetes, arthritis, heart problems, high blood pressure, cancer, kidney problems, asthma, cirrhosis, and hepatitis. A binary measure, *chronic illness,* was created so that 0

represents those who report having none of the illnesses listed above and 1 represents inmates who reported having at least 1 chronic illness. *Disability* was created using several survey questions regarding having physical difficulties. The questions included having difficulty seeing or hearing, paralysis, or needing help with activities of daily living (ADLs). A single measure was created so that 0 represents having no difficulties and 1 represents having indicated yes to at least one of the physical impairments listed above. As noted in Chapter 2, several other predictors will be included in the analyses. These measures include mental disorder, victimization prior to prison, timed served, and prior incarceration.

Individual-level demographic variables. Consistent with previous literature on misconduct and victimization in prison (Blowers & Blevins, 2015; Camp et al., 2003; Gendreau et al., 1997; Hilinski-Rosick & Freiburger, 2016; Houser et al., 2012; Jiang & Fisher-Giorlando, 2002; Lahm, 2009c; Listwan et al., 2010; Perez et al., 2010; Steiner et al., 2014; Wooldredge, 1994, 1998; Wooldredge et al., 2001), several demographic measures will be included. These include age, race, Hispanic origin, sex, marital status, educational attainment, hours spent in one's cell, and controlling offense (see Chapter 2 for full descriptions of the measures).

Prison-level variables. A limitation of the 2004 SISFCF is that prison level measures are not included. To account for the characteristics of the facilities inmates were housed in, individual-level measures were aggregated by facility to produce the proportion of inmates with each characteristics housed in each facility. At the prison-level, six measures were used to characterize the sample of facilities. The type of prison (State versus Federal) was included. Additionally, measures of the proportion of inmates in the facility who were older, White, violent, and participating in programs were included. The average time inmates spent in their cells was also included.

Analytical Procedure

Analyses for both outcomes were modeled using a multilevel framework. The two

outcomes of interest are both discrete and non-normal variables. As such, both variables violate

the ordinary least squares (OLS) assumption of normality. *Victimization* is a binary outcome

variable; therefore, the most appropriate regression model is the binary logistic regression, which

is a variant of the general linear model that incorporates dichotomous outcomes.

The *frequency of misconduct* measure is a non-normal, ratio-level count variable.

Because count data is represented by integers bounded at zero, the distribution is non-normal.

Count data are represented by a Poisson distribution. Thus, the most appropriate regression

model is Poisson regression, which is a variant of the general linear model that incorporates

count dependent variables (Hilbe, 2011). The key assumption of Poisson regression is that the

mean and variance of the Poisson probability distribution are equal (Hilbe, 2011). As the mean

increases, so does the variability in the data. Overdispersion is one issue that can arise with count

data. Overdispersion occurs when the variance of the distribution is greater than the mean (Hilbe,

2011). When overdispersion exists, the Poisson model is not appropriate. Negative binomial

regression corrects for overdispersion by fitting a gamma distribution that accounts for the

additional unexplained variance in the outcome (Hilbe, 2011). Thus, negative binomial is an

extension of the Poisson model that allows for greater variance in the distribution of the

outcome.

Several methods were employed to test for overdispersion in the distribution of the

frequency of misconduct measure. First, the mean and variance of the frequency measure was

examined for the younger and older inmates. For younger inmates, the mean number of

misconduct reported was 2.19 with a variance of 97.21. For older inmates, the mean number of

misconduct reported was 1.11 with a variance of 37.39 (see Table 2.9). For both groups, the variance is larger than the mean, suggesting the presence of overdispersion. Second, the Pearson dispersion statistic was produced. If the value, $\frac{Pearson}{df}$, is greater than 1 the data are overdispersed. For the younger inmate model, the Pearson dispersion statistics was 18.33. For older inmates, the dispersion statistic was 6.73. Because the Pearson dispersion statistics for both models are substantially greater than 1, the data are overdispersed.

Third, Figure 4.1 presents probability - probability (P-P) plots that compare the empirical distribution of the observed data to the theoretically specified distribution for the Poisson model predicting the frequency of misconduct and the negative binomial model. As indicated by the figure, the empirical distribution of the observed data in the negative binomial model fits the theoretically specified distribution better than that of the Poisson model. Thus, the negative binomial model was selected for the final analyses. Because observations in these data vary in terms of time at risk (i.e., time served) the exposure option in STATA was utilized to account for differences in the amount of time served (Long & Freese, 2014). The results represent the rate of misconduct over a period of time served for each inmate.

Figure 4.1. PP Plots Comparing the Fit of the Poisson Model to the Negative Binomial Model
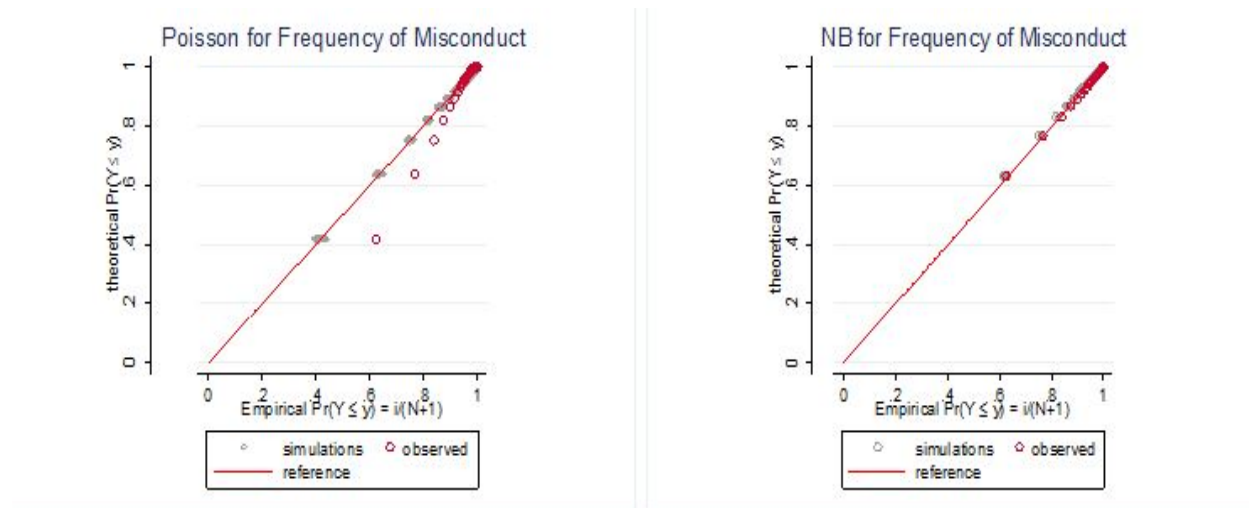
Multilevel model. In these data, prisoners are nested within prisons. Because persons are clustered within sampling units, the residuals are not independent of each other; thus, the OLS assumption of independence is violated. Furthermore, the variance of the error terms varies within and across sampling units (i.e., prisons), which violates the assumption of homoscedasticity (Raudenbush & Bryk, 2002a). Single-level OLS regression fails to account for the non-independence of the data. Failing to account for the dependency in the data results in underestimated standard errors, which increases the likelihood of a Type I error and produces biased results. Thus, Hierarchical Linear Modeling (HLM) will be used for two reasons: 1) to appropriately model the clustering of the data in order to produce unbiased standard errors, and 2) to examine individual-level and contextual effects on misconduct and victimization.

HLM is a type of regression that allows for the examination of both within-group and between-group relationships within a single analysis. Hierarchical Generalized Linear Modeling (HGLM) is a variant of HLM that accommodates the binary and count dependent variables.

Using the ME (mixed effects) command in STATA 14, multilevel analyses were conducted to produce random intercept models.

The final analytical sample consists of 15,781 inmates. The maximum amount of missing cases for any one variable included in the analyses was 4%, as such, missing cases were listwise deleted. Additionally, the final number of facilities included in the analysis of the older inmate models was 197, out of the 303 facilities that housed older inmates. To ensure a sufficient number of older inmates within each facility, those facilities with fewer than five older inmates were removed from the analyses. Because of the small number of older inmates compared to younger inmates, some facilities have few or no older prisoners; therefore, some facilities could not be included in the analyses. In a simulation study conducted by Maas and Hox (2005), the results show that sample size at level-2 (i.e., the group level) influences the accuracy of the estimates produced. The authors found that the minimum number of groups required to produce unbiased coefficients and standard errors was 50. The authors also examined the accuracy of the estimates with varying level-1 sample sizes (i.e., 5, 30, and 50 cases). When the condition of 50 or more groups was met, regardless of the level-1 sample size the estimates produced were unbiased. Given the findings of Maas and Hox (2005), the final sample size of 197 facilities with at least 5 older inmates is sufficiently large enough for the analyses.

After all of the full models are produced, the coefficients of the model for younger and older inmates were compared using the equality of coefficients test developed by Clogg, Petkova, and Haritou (1995) for the negative binomial model. Interaction terms for the logit models were examined.[19] Comparisons were made only if at least one coefficient was

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[19] According to Paternoster, Brame, Mazerolle, and Piquero (1998), the Clogg test cannot be used to compare coefficients of logit models. Furthermore, Allison (1999) argued that "…coefficients in these binary regression models are confounded with residual variation (unobserved heterogeneity)" (p. 187). Because the degree of residual variance may differ across models, standard equality tests, which assumes equal variance across groups, cannot be

significantly related to the outcome. In the following section the results of the analyses are presented. First, descriptive findings for the sample by age group are presented. Next, bivariate results between the predictors and outcomes are presented. Finally, multilevel models predicting misconduct and victimization are presented.

Results

        Sample description. These analyses use the 2004 Survey of Inmates State and Federal Correctional Facilities. The sample consists of the 15,781 younger inmates housed in 326 facilities and 1,474 older inmates housed in 197 facilities. For a full description of the sample see Table 2.9 in the methodology chapter.

        Bivariate statistics. First, bivariate relationships between the predictors and outcomes were examined. Table 4.1 presents the average number of misconducts across the various predictors. The average number of misconducts was greater for inmates with a chronic illness, who were male, those who were not married, who were non-White, and who were non-Hispanic. Inmates with less than a high school education, who had a mental disorder, and those who experienced victimization before prison and while incarcerated reported more misconduct. Additionally, the average number of misconduct was greater for inmates who have been previously incarcerated, who are serving time for a violent offense, and those housed in a State facility.

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used. Residual variation across groups may produce differences that are not truly indicative of differences in causal effects across models (Allison, 1999). As such, to determine whether there are age differences, interaction terms were created for every variable where at least one coefficient was significant.

Table 4.1

Bivariate Statistics Examining the Relationship Between Frequency of Misconduct and Predictors

		Frequency of Misconduct	
		M (SD)	t or F
Chronic Illness	No	1.93(7.93)	-3.10***
	Yes	2.38(11.72)	
Disability	No	2.08(9.64)	-0.91
	Yes	2.25(9.39)	
Female	Male	2.18(9.00)	2.65**
	Female	1.72(11.31)	
Marital Status	Married	1.07(5.01)	-6.82***
	Not Married	2.31(10.30)	
White	Non-White	2.56(11.43)	6.70***
	White	1.60(7.19)	
Hispanic	No	2.17(9.31)	2.75**
	Yes	1.68(10.48)	
Education	Less than HS	2.46(10.11)	7.07***
	HS	1.42(8.40)	
Any Mental Disorder	No	1.75(7.60)	-8.19***
	Yes	3.07(13.42)	
Victimization	No	1.31(6.81)	-28.79***
	Yes	7.25(18.98)	
Prior Victimization	No	1.89(8.71)	-5.21***
	Yes	2.76(11.90)	
Prior Incarceration	No	1.89(9.29)	-5.44***
	Yes	2.93(10.89)	
Controlling Offense	Violent	3.37(11.72)	83.27***
	Property	1.45(8.20)	
	Drug	0.93(7.25)	
	Public Order	0.95(5.00)	
Federal Prison	State	2.42(10.46)	9.57***
	Federal	0.74(4.07)	

Table 4.2 presents the correlation coefficients for the relationship between the predictors and frequency of misconduct. The correlation between age and frequency of misconduct is weak and negative ($r = -0.058$), indicating that as age increases, the frequency of misconduct decreases. Time served is moderately and positively ($r = 0.174$) associated with frequency of misconduct. That is, as time in prison increases so does the frequency of misconduct. Although hours spent in one's cell is positively correlated to frequency of misconduct, the relationship is

weak (r = 0.073), indicating that as time in a cell increases so does the frequency of misconduct. The proportion of older inmates housed in facilities is not significantly associated with frequency of misconduct. The proportion of White inmates housed in a facility is negatively and weakly (r = -0.043) associated with frequency of misconduct, indicating that as the proportion of White inmates increases, the frequency of misconduct decreases. The proportion of violent offenders in a facility was positively and moderately (r = 0.131) associated with misconduct, indicating that as the proportion of violent offenders increases so does the frequency of misconduct. The proportion of inmates participating in programs (r = 0.036) and the average hours inmates in a facility spent in their cell (r = 0.077) are both weakly and positively associated with misconduct. As the proportion of inmates in programming and the amount of time inmates in a facility spend in their cell increases, the frequency of misconduct also increases.

Table 4.2

Pearson's R Correlation Matrix Between Predictors and Frequency of Misconduct.

	1	2	3	4	5	6	7	8	9
1. Freq. Miscond.	1								
2. Age	-0.058***	1							
3. Time Served	0.174***	0.311***	1						
4. Hours in Cell	0.073***	-0.033***	-0.004	1					
5. Prop. Older	-0.003	0.262***	0.185***	-0.068***	1				
6. Prop. White	-0.043***	0.046***	-0.098***	0.013	0.148***	1			
7. Prop. Violent	0.131***	0.016	0.282***	0.124***	0.093***	-0.185***	1		
8. Prop. Programs	0.036***	0.035***	0.083***	-0.113***	0.134***	0.010	0.091***	1	
9. Avg Hours	0.077***	-0.068***	0.037***	0.414***	-0.167***	0.031***	0.293***	-0.278***	1

Note. *** $p < .001$

Table 4.3 presents the chi-square tests examining the relationship between the categorical predictors and victimization. With the exception of race and Hispanic, the association between the predictors and victimization were statistically significant. Of those with a chronic illness,

15% reported being victimized compared to 12% of inmates without a chronic illness. Approximately 17% of inmates with a physical disability experienced victimization compared to about 13% of inmates without a disability. Seventeen percent of females experienced victimization compared to 15% of males. Fourteen percent of inmates who were not married reported experiencing victimization compared to 9% of inmates who were married.

Of those with at least a high school diploma or GED, approximately 11% experienced victimization compared to about 15% of inmates with less than a high school education. Eighteen percent of inmates with a mental disorder were victimized compared to approximately 12% of inmates without a mental disorder. Of those who were written up for a rule violation, about 24% experienced victimization compared to 4% of those without a write up. Seventeen percent of inmates who experienced victimization prior to prison were victimized in prison compared to 12% of those with no victimization history. Of those who had been previously incarcerated, about 17% experienced victimization compared to 12% of inmates without an incarceration history. Approximately 21% of violent offenders, 10% of property offenders, 6% of drug offenders, and 7% of public order offenders experienced victimization. Fifteen percent of state inmates experienced victimization compared to 7% of federal inmates.

Table 4.3

Chi-Square Results Examining the Relationship Between Victimization and Categorical Predictors.

Variable		No % (N)	Yes % (N)	χ^2
		Victimization		
Chronic Illness	No	87.96 (9551)	12.04 (1307)	40.372***
	Yes	84.66 (5977)	15.34 (1083)	
Disability	No	87.49 (13054)	12.51 (1866)	52.735***
	Yes	82.56 (2480)	17.44 (524)	
Female	Male	84.97 (11977)	15.03 (2118)	162.235***
	Female	92.86 (3563)	7.14 (274)	
Marital Status	Married	90.59 (3012)	9.41 (313)	54.715***
	Not Married	85.75 (12506)	14.25 (2078)	
White	Non-White	87.05 (7785)	12.95 (1158)	2.230
	White	86.29 (7622)	13.71 (1211)	
Hispanic	No	86.64 (12596)	13.36 (1943)	0.041
	Yes	86.77 (2944)	13.23 (449)	
Education	Less than HS	85.21 (9711)	14.79 (1686)	57.381***
	HS	89.20 (5825)	10.80 (705)	
Any Mental Disorder	No	88.47 (11597)	11.53 (1511)	136.746***
	Yes	81.74 (3882)	18.26 (867)	
Any Misconduct	No	95.62 (9096)	4.38 (417)	1400.000***
	Yes	76.44 (6330)	23.56 (1951)	
Prior Victimization	No	87.99 (11907)	12.01 (1625)	85.294***
	Yes	82.52 (3598)	17.48 (762)	
Prior Incarceration	No	87.58 (12650)	12.42 (1794)	42.431***
	Yes	83.16 (2499)	16.84 (506)	
Controlling Offense	Violent	79.30 (5943)	20.70 (1551)	625.257***
	Property	90.19 (3660)	9.81 (398)	
	Drug	93.64 (3934)	6.36 (267)	
	Public Order	92.66 (1642)	7.34 (130)	
Federal Prison	State	85.14 (12195)	14.86 (2129)	143.013***
	Federal	92.71 (3345)	7.29 (263)	

*Note. *p< .05. **p < .01. ***p < .001*

Table 4.4 presents the results for the independent sample t-tests. The average age for inmates who have not been victimized is greater than the average of victims. Compared to non-

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victims, victims spent more time in their cell and had served more time in prison. Additionally, victims were housed in facilities with a lower proportion of White offenders and a greater proportion of violent offenders, and inmates in programs. Compared to non-victims, victims were housed in facilities where inmates, on average, spent more time in their cell.

Table 4.4

Independent Samples T-Test Examining Mean Differences for Victims and Non-Victims

Variable	Victimization		t
	No	Yes	
	M (SD)	M (SD)	
Level 1			
Age	36.00 (10.58)	34.75(10.07)	5.43***
Hours in Cell	12.41(5.56)	13.76(6.24)	-10.83***
Time Served	40.88(55.29)	82.82(78.52)	-31.83***
Level 2			
Proportion Older	0.10(0.08)	0.11(0.07)	-1.49
Proportion White	0.50(0.16)	0.48(0.16)	4.94***
Proportion Violent	0.41(0.23)	0.55(0.21)	-28.88***
Proportion Program	0.69(0.16)	0.70(0.14)	-2.43
Average Hours in Cell	12.51(2.33)	13.15(2.41)	-12.38***

Note. **$p < .01$, ***$p < .001$

Age differences. Next, the relationship between age and all of the variables was examined to determine whether there were age differences. The results are presented in Table 4.5. All of the variables in Table 4.5 are significantly associated with age. A greater percentage of younger inmates reported victimization compared to older inmates. A greater percentage of older inmates had a chronic illness, a physical disability, and were White compared to younger inmates. A greater percentage of younger inmates were female, not married, and Hispanic. A greater percentage of younger inmates had a mental disorder, a rule violation, experience of victimization before prison, and been previously incarcerated compared to older inmates. A

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greater percentage of older inmates were incarcerated for a violent offense, whereas a greater

percentage of younger inmates were incarcerated for a property, drug, and public order offense.

A greater percentage of older inmates were housed in federal prisons.

Table 4.5

Chi-Square Results Examining Age Differences in the Misconduct, Victimization, and Predictors.[1]

| | Age | | |
| | Younger | Older | χ^2 |
Variable	% (N)	% (N)	
Victimization	13.63 (2188)	10.84 (180)	10.139**
Any Misconduct	47.52 (7582)	37.88 (626)	54.581***
Chronic Illness	35.65 (5725)	72.08 (1198)	840.031***
Disability	14.80 (2380)	34.38 (572)	416.649***
Female	21.61 (3518)	17.98 (303)	12.013**
Not Married	82.34 (13372)	73.57 (1236)	77.801 ***
White	48.12 (7763)	62.14 (1039)	116.067***
Hispanic	19.44 (3164)	14.30 (241)	26.205***
Education	34.23 (5571)	53.06 (894)	234.771***
Any Mental Disorder	26.93 (4312)	24.00 (397)	6.586*
Prior Victimization	24.92 (4009)	19.36 (321)	25.189***
Prior Incarceration	17.96 (2821)	11.28 (185)	46.276***
Violent Offense	41.88 (6656)	50.76 (838)	52.792***
Property Offense	23.33 (3707)	20.96 (346)	--
Drug Offense	24.63 (3914)	18.84 (311)	--
Public Order Offense	10.16 (1615)	9.45 (156)	--
Federal Prison	19.28 (3138)	32.40 (546)	161.372***

*Note. **p < .01. ***p < .001*
[1] The results presented are for the inmates in the 1 category of all of the measures.

Table 4.6 presents the results of the independent samples t-tests with age and the

continuous predictors. With the exception of hours spent in one's cell, all of the predictors are

significantly associated with age, indicating that age differences exist. The average number of

misconducts was greater for younger inmates compared to older inmates. On average, older

inmates were older and spent more time in prison compared to younger inmate. Older inmates

tend to be housed in prisons with a greater proportion of older, White, violent inmates, and those

participating in programs. Younger inmates were housed in facilities where inmates, on average,

spent more time in their cell compared to older inmates.

Table 4.6

Independent Samples T-Test Examining Mean Differences Across Age Groups

	Age		
Variable	Younger	Older	*t*
	M (SD)	M (SD)	
Frequency of Misconduct	2.193 (9.859)	1.014 (4.011)	4.867***
Age	33.463 (8.118)	56.171 (5.118)	-110.000***
Hours in Cell	12.594 (5.709)	12.480 (5.393)	0.778
Time Served	42.062 (53.485)	86.130 (94.726)	-28.594***
Proportion Older	0.098 (0.069)	0.175 (0.107)	-40.726***
Proportion White	0.493 (0.164)	0.514 (0.154)	-5.098***
Proportion Violent	0.424 (0.231)	0.442 (0.262)	-2.879**
Proportion Program	0.690 (0.159)	0.717 (0.140)	-6.635***
Average Hours in Cell	12.627 (2.359)	12.175 (2.213)	7.527***

*Note. **p < .01. ***p < .001*

Multilevel regression predicting misconduct

Unconditional model. The first step in multilevel modeling is to produce the

unconditional (null) model, in which the negative binomial model is estimated without predictors

to gauge the amount of variation in the frequency of misconduct that is attributed to the prison

level. The unconditional models for each age group were estimated at level-1 as follows:

$$\eta_{ij} = log(\lambda_{ij}) = \beta_{0j} + r_{ij}, \quad \text{where the inverse is} \quad \lambda_{ij} = exp(\eta_{ij})$$

to account for overdispersion, an explicit error term ε is added to the model, as follows:

$$\lambda_{ij} = exp(\eta_{ij} + \varepsilon_{ij})$$

and estimated at level-2 as follows:

$$\beta_{0j} = \gamma_{00} + u_{0j} \qquad u_{0j} \sim N(0, \tau_{00})$$

where the link function is $\eta_{ij} = log(\lambda_{ij})$ and η_{ij} represents the log of the misconduct rate (or expected count) (Raudenbush & Bryk, 2002a), and ε_{ij} is the error term, which accounts for the unexplained variance (Hox, 2010). At level-1, β_{0j} represents the expected rate of misconduct for a prisoner in prison j, r_{ij} represents the level-1 error term (residual) in the first equation, γ_{00} is the average log misconduct rate, the variation between prisons (group residuals) is represented by the level-2 error term, $u_{0j} \sim N(0, \tau_{00})$, which is assumed for all models to be normally distributed with a mean of zero and variance τ_{00} (the variation between prisons in the log misconduct rate). After producing the unconditional model, the intraclass correlation coefficient (ICC) is usually calculated to gauge how much variation in the outcome is explained at level-2. For Poisson and negative binomial, however, to date there is no direct way to calculate an ICC.[20]

Conditional model. Next the conditional models, which are the models that include all of the covariates were run. The conditional models for each age group were estimated at level-1 as follows:

$$
\begin{aligned}
\eta_{ij} = log(\lambda_{ij}) = {} & \beta_{0j} + \beta_1(Age_{ij}) + \beta_2(ChronicIllness_{ij}) + \beta_3(Disability_{ij}) + \beta_4(Female_{ij}) \\
& + \beta_5(MaritalStatus_{ij}) + \beta_6(White_{ij}) + \beta_7(Hispanic_{ij}) + \beta_8(Education_{ij}) \\
& + \beta_9(MentalDisorders_{ij}) + \beta_{10}(Victimization_{ij}) + \beta_{11}(PriorAbuse_{ij}) \\
& + \beta_{11}(PriorIncarceration_{ij}) + \beta_{12}(HoursinCell_{ij}) + \beta_{13}(TimeServed_{ij}) \\
& + \beta_{14}(Property_{ij}) + \beta_{15}(Drug_{ij}) + \beta_{16}(PublicOrder_{ij}) + r_{ij}
\end{aligned}
$$

and estimated at level-2 as follows:

---

[20] In order to get a sense of the variation accounted for at the prison level, OLS were run for each age group and an ICC was calculated. For both the young and old models the ICC was 0.04, indicating that 4% of the variation in frequency of misconduct was at the prison level.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(Federal_j) + \gamma_{02}(ProprotionOlder_j) + \gamma_{03}(ProprortionWhite_j)$$
$$+ \gamma_{04}(ProportionViolent_j) + \gamma_{05}(ProportionProgram_j) + \gamma_{01}(MeanHours_j)$$
$$+ u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$
$$\beta_{2j} = \gamma_{20}$$
$$\beta_{3j} = \gamma_{30}$$
$$\beta_{4j} = \gamma_{40}$$
$$\beta_{5j} = \gamma_{50}$$
$$\beta_{6j} = \gamma_{60}$$
$$\beta_{7j} = \gamma_{70}$$
$$\beta_{8j} = \gamma_{80}$$
$$\beta_{9j} = \gamma_{90}$$
$$\beta_{10j} = \gamma_{100}$$
$$\beta_{11j} = \gamma_{110}$$
$$\beta_{12j} = \gamma_{120}$$
$$\beta_{13j} = \gamma_{130}$$
$$\beta_{14j} = \gamma_{140}$$
$$\beta_{15j} = \gamma_{150}$$
$$\beta_{16j} = \gamma_{160}$$

where γ_{0n} represents the expected change in the log misconduct rate corresponding to level-2 predictors while holding constant other predictors in the model. For example, γ_{01} represents the expected log misconduct rate for an inmate housed in a Federal prison, holding constant all of the other predictors. γ_{n0} represents the expected change in the log misconduct rate corresponding to level-1 predictors while holding constant the other predictors in the model. For example, γ_{10} corresponds to the level-1 variable age and represents the expected log misconduct rate associated with a one-unit change in age.

Table 4.7 presents the results for the multilevel model predicting the rate of misconduct that excludes covariates. The coefficients produced for the negative binomial models are incident-rate ratios (IRR), which is the estimated rate ratio associated with a one unit increase in the predictor (UCLA, n.d.). The log expected rate of misconduct is 1.374 for the full sample, 1.446 for younger inmates and 0.642 for older inmates. The dispersion parameter for all three models is significantly greater than 0, indicating overdispersion (UCLA, n.d.).

Table 4.7

Multilevel Unconditional Negative Binomial Regression Predicting Frequency of Misconduct

	Full Sample		Younger Inmates		Older Inmates	
	IRR	95% C.I.	IRR	95% C.I.	IRR	95% C.I.
Intercept	1.374***	(1.215,1.553)	1.446***	(1.278,1.637)	0.642***	(0.516,0.797)
Level-2 variance	1.163	(0.978,1.383)	1.170	(0.982,1.393)	1.221	(0.843,1.771)
Dispersion Parameter	4.261***	(4.119,4.410)	4.141***	(3.999,4.293)	4.362***	(3.721,5.119)

Note. ***p < .001

       Table 4.8 presents the multilevel model predicting the rate of misconduct for the full

sample. Several individual-level predictors are related to misconduct for the full sample. For

every one year increase in age, the expected rate of misconduct decreased by 5%.[21] For inmates

with a chronic illness, the expected rate of misconduct is 1.202 times the rate of inmates without

a chronic illness. The expected rate of misconduct for females is 1.460 times the rate for males.

The expected rate of misconduct for inmates who are not married is 1.368 times the rate of those

who are married. For White and Hispanic inmates, the expected rate of misconduct is 0.750 and

0.823 times the rate for non-White and non-Hispanic inmates, respectively. The expected rate of

misconduct for inmates with a mental disorder is 1.470 times the expected rate for inmates

without a disorder. For those who experienced victimization in prison, the rate of misconduct

increased by 165%. The expected rate of misconduct for inmates who experienced victimization

prior to prison and those who were previously incarcerated increased by 10% and 21%,

respectively. For every one unit increase in hours spent in cell and time served, the expected rate

of misconduct increased by 26% and 165%, respectively. The expected rate of misconduct for

drug offenders was 0.831 times the rate for violent offenders.

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[21] Percent change in the incident rate of misconduct was calculated as $(1 - IRR)*100$.

At the prison level, several predictors were related to misconduct. For inmates housed in a Federal prison, the expected rate of misconduct decreased by 29% compared to the rate for inmates in State prisons. As the proportion of older prisoners where inmates were housed increases from 0 to 1, the rate of misconduct for an inmate decreased by 70%. As the proportion of violent offenders and those participating in programs increases, the expected rate of misconduct for an inmate increased by 313% and 91%, respectively.

Table 4.8

Multilevel Negative Binomial Regression Predicting Frequency of Misconduct

	Full Model (n = 15,977)	
	IRR	95% C.I.
Level 1		
Age	0.947***	(1.199,1.776)
Chronic Illness	1.202***	(1.120,1.290)
Disability	1.062	(0.972,1.161)
Female	1.460***	(1.199,1.776)
Marital Status	1.368***	(1.250,1.497)
White	0.750***	(0.700,0.804)
Hispanic	0.823***	(0.750,0.903)
Education	0.807***	(0.752,0.866)
Mental Disorder	1.470***	(1.361,1.589)
Victimization	2.653***	(2.437,2.888)
Prior Victimization	1.098***	(1.011,1.193)
Prior Incarceration	1.209***	(1.114,1.312)
Hours in Cell	1.255***	(1.163,1.353)
Time Served	2.650***	(2.530,2.775)
Property Offense	0.963	(0.881,1.052)
Drug Offense	0.831***	(0.756,0.914)
Public Order	0.909	(0.800,1.033)
Level 2		
Federal Prison	0.706**	(0.545,0.915)
Elderly	0.299*	(0.112,0.797)
White	0.943	(0.603,1.475)
Violent	4.127***	(2.722,6.257)
Program	1.902**	(1.176,3.076)
Hours	0.979	(0.948,1.011)
Constant	0.382**	(0.204,0.715)
Dispersion Parameter	2.364***	(2.268,2.463)
Notes. * $p < .05$, ** $p < .01$, *** $p < .001$		

Younger inmates. Table 4.9 presents the results for the conditional models, which include all of the covariates. The second and third columns represent the model for younger inmates. Several individual-level predictors are related to the rate of misconduct for younger inmates. Age was negatively associated with the frequency of misconduct, in that for every one year increase in age the rate of misconduct decreased by 6%, holding constant all other variables in the model. Having a chronic illness increased the rate of misconduct by 22%. The rate of misconduct for females and inmates who are not married increased by 42% and 36%, respectively. For White and Hispanic inmates, the rate of misconduct decreased by 27% and 17%, respectively, compared to non-White and non-Hispanic inmates. Having at least a high school diploma was associated with a 19% decrease in the rate of misconduct. Having a mental disorder increased the rate of misconduct by 53%. Victimization in prison substantially increased the rate of misconduct by 167%.

The rate of misconduct for inmates who had been previously incarcerated and those who spent more time in their cell increased by 22% and 24%, respectively. As time served in prison increased, the rate of misconduct increased by 166%. Having experienced prior victimization increased the rate of misconduct by 12%. Compared to violent offenders, being incarcerated for a drug offense significantly decreased the rate of misconduct by 15%. Incarceration for a property or public order offense were not significantly associated with the rate of misconduct.

Several prison-level measures predicted misconduct among younger inmates. Specifically, being housed in a federal facility was associated with a decrease in the rate of misconduct by 32%. As the proportion of older inmates within a facility increases, the rate of misconduct for an individual decreases by about 74%. As the proportion of violent offenders and those in programs in a facility increases, the rate of misconduct for inmates increases by about

331% and 83%, respectively. The average amount of time inmates in a facility spent in their cell was not significantly associated with misconduct.

Older inmates. The fourth and fifth columns of Table 4.9 present the results for the older inmates. Among older inmates, as age increased, the rate of misconduct decreased by 3%. For those who were not married, the rate of misconduct increased by about 42%. The rate of misconduct for White inmates decreased by 33%, compared to non-White inmates. For inmates with at least a high school diploma, the rate of misconduct decreased by 27%, compared to inmates with less than a high school diploma. Being victimized in prison increased the rate of misconduct by 134%. As time spent in prison increased, the rate of misconduct was multiplied by 153%. Compared to violent offenders, being incarcerated for a drug offense decreased the rate of misconduct by 48%.

Unlike for the younger prisoners, for older prisoners, only one prison-level variable was significantly associated with misconduct. Specifically, a one unit increase in the proportion of violent offenders was associated with a 198% increase in the rate of misconduct.

Model comparisons. Using the Clogg et al. (1995) test, the negative binomial coefficients (not presented) were compared for each model. Only the magnitude of the coefficients for age and property offense were significantly different. The effect of age on misconduct was greater for older inmates. Serving time for a property offense was associated with a decrease in the expected count of misconduct for both groups, but the effects were greater for younger inmates.

Comparison of effect sizes. Although Table 4.8 shows that more variables predict misconduct for younger inmates compared with older inmates, a comparison of the effect sizes warrant discussion. Although few variables significantly predict the rate of misconduct for older inmates, the size of the coefficients for some of the non-significant variables are larger in that

model than the coefficients in the model for younger inmates, which suggests that some variables might have stronger effects for older inmates. It is possible that these variables are not significant for older inmates because of the small number of older inmates in the sample.

First, several measures were significantly associated with the rate of misconduct in both models. The effect of marital status on the rate of misconduct was greater for older inmates. Being not married was associated with a 36% increase in the rate of misconduct for younger inmates and a 42% increase for older inmates. Race and education were negatively associated with the frequency of misconduct for both age groups, with greater effect on the misconduct of older inmates. Being White was associated with a 27% decrease in the rate of misconduct for younger inmates and a 33% decrease for older inmates. For younger inmates, there was a 19% decrease in the rate of misconduct for those who had at least a high school diploma/GED compared to a 27% decrease for older inmates.

Experiencing victimization significantly increased the rate of misconduct for both age groups, but the odds ratio is greater for younger inmates. For those who were victimized, the rate of misconduct increased by 167% for younger inmates compared to a 134% increase for older inmates. For younger inmates, the rate of misconduct increased by 166% for each month increase in time served compared to 153% increase for older inmates. Compared to violent offenders, serving time for a drug offense was negatively associated with the rate of misconduct. That is, there was a 15% decrease in the rate of misconduct for younger inmates incarcerated for a drug offense compared to a 48% decrease for older inmates. Being housed in a facility with a large proportion of violent offenders is associated with an increase in the rate of misconduct for both age groups, but had a stronger effect for younger inmates. As the proportion of violent offenders

within a facility increased, the rate of misconduct increased by about 331% for younger inmates and 198% for older inmates.

Second, several measures significantly predicted the rate of misconduct for younger inmates, but not for older inmates. For females, the rate of misconduct increased by 42% for younger inmates compared to 28% for older inmates. For those with a mental disorder, the rate of misconduct increased by 53% for younger inmates compared to 10% for older inmates. Having a history of incarceration was associated with a 22% increase for younger inmates and a 30% increase for older inmates. Being housed in a federal prison was associated with a 32% decrease in the rate of misconduct for younger inmates and a 12% increase for older inmates. As the proportion of inmates participating in programming in a facility increased, the rate of misconduct increased by 83% for younger inmates and 10% for older inmates.

Finally, some measures were not significantly related to the frequency of misconduct for either model, but appear to have strong effects on misconduct. For those with a physical disability, the rate of misconduct increased by 4% for younger inmates compared to a 30% increase for older inmates. Compared to those serving time for a violent offense, for those serving time for a property offense the rate of misconduct decreased by 1% for younger inmates compared to 30% for older inmates. For those serving time for a public order offense, the rate of misconduct decreased by 11% for younger inmates and increased by 22% for older inmates.

Table 4.9

Multilevel Negative Binomial Regression Predicting Frequency of Misconduct by Age

	Younger Inmates (n = 14307)		Older Inmates (n = 1474)		Z^1
	IRR	95% C.I.	IRR	95% C.I.	
Level-1 Covariates					
Age	0.943***	(0.938,0.947)	0.971*	(0.949,0.993)	-2.462*
Chronic Illness	1.218***	(1.132,1.311)	1.236	(0.924,1.654)	
Disability	1.036	(0.942,1.139)	1.297	(0.986,1.707)	
Female	1.420**	(1.164,1.733)	1.277	(0.796,2.049)	
Marital Status	1.357***	(1.233,1.493)	1.419*	(1.046,1.926)	
White	0.735***	(0.683,0.790)	0.671**	(0.510,0.883)	
Hispanic	0.835***	(0.758,0.919)	0.812	(0.532,1.238)	
Education	0.814***	(0.755,0.876)	0.728*	(0.560,0.946)	
Mental Disorder	1.527***	(1.408,1.655)	1.101	(0.802,1.512)	
Victimization	2.668***	(2.442,2.915)	2.338***	(1.643,3.327)	
Prior Victimization	1.118*	(1.025,1.219)	1.138	(0.827,1.566)	
Prior Incarceration	1.216***	(1.177,1.323)	1.297	(0.896,1.879)	
Hours in Cell	1.238***	(1.145,1.339)	1.223	(0.881,1.698)	
Time Served	2.664***	(2.538,2.797)	2.531***	(2.153,2.974)	
Property Offense[2]	0.986	(0.900,1.081)	0.702	(0.465,1.059)	
Drug Offense	0.848**	(0.769,0.934)	0.517**	(0.324,0.823)	2.042*
Public Order	0.894	(0.783-1.021)	1.221	(0.719,2.073)	
Level-2 Covariates					
Federal Prison	0.684**	(0.526-0.890)	1.121	0.673,1.867)	
Proportion Older	0.264*	(0.094-0.743)	0.311	0.061,1.590)	
Proportion White	0.946	(0.602-1.486)	0.928	0.334,2.576)	
Proportion Violent	4.308***	(2.826-6.566)	2.975*	1.085,8.160)	
Proportion Program	1.825*	(1.123-2.967)	1.101	0.346,3.507)	
Avg Hours in Cell	0.977	(0.946-1.010)	0.974	0.903,1.051)	
Constant	0.468*	(0.246-0.889)	0.231	0.033,1.615)	
Dispersion Parameter	2.318***	(2.220,2.419)	2.601***	2.157,3.140)	

Note. *p< .05. **p < .01. ***p < .001
[1] Equality of coefficient (Clogg et al. (1995) test) was calculated using the equation provided by Paternoster et al. (1998).
[2]Violent offense is the reference.

Multilevel regression predicting victimization

Unconditional model. The unconditional models predicting victimization without any predictors were run for each age group. The unconditional models were estimated at level-1 as follows:

$$\log \left[\frac{\varphi_{ij}}{(1-\varphi_{ij})} \right] = \beta_{0j} + r_{ij}$$

and estimated at level-2 as follows,

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

where φ represents the probability of being victimized for a particular prisoner (i) in a particular prison (j), β_{0j} refers to the expected log-odds of being victimized for prisoners in prison j, r_{ij} is the level-1 residual, and γ_{00} is the expected log-odds of being victimized holding constant the value of the prison-level residuals. The variation between prisons (group residuals) is represented by the level-2 error term $u_{0j} \sim N(0, \tau_{00})$, which is assumed for all models throughout this study. In HGLM with binary outcomes the level-1 residual variance, σ^2, is known to be $\varphi_{ij}/(1 - \varphi_{ij})$. In this case, the level-1 residual variance is heteroscedastic, therefore no constant variance is estimated (Raudenbush & Bryk, 2002).

Table 4.10 presents the result from the unconditional models. The expected odds of experiencing victimization is 0.132, averaging over the level-2 residuals for younger inmates. The expected odds of victimization for older inmates is 0.107. The intraclass correlation coefficient was calculated as $\frac{\tau_{00}}{\tau_{00}+\frac{\pi^2}{2}}$, where $\frac{\pi^2}{2} = 3.29$, assuming that the level-1 residuals follow a standard logistic distribution (Snijders & Bosker, 2012). A standard logistic distribution has a mean of zero and a variance of $\frac{\pi^2}{2}$. The ICC for the full model is 0.163, indicating that about 16% of the variance in victimization is attributed to the prison level. For younger inmates, the ICC is 0.166, indicating that approximately 17% of the variation in victimization is at level-2. For older inmates, the ICC is 0.137, indicating that approximately 14% of the variation in victimization is at level-2.

Table 4.10

Multilevel Unconditional Binary Logistic Regression Predicting Victimization

	Full Sample		Younger Inmates		Older Inmates	
	OR	95% C.I.	OR	95% C.I.	OR	95% C.I.
Intercept	0.129***	(0.117,0.143)	0.132***	(0.119,0.147)	0.107***	(0.086,0.133)
Level-2 variance	0.641	(0.515,0.798)	0.655	(0.524,0.818)	0.523	(0.242,1.127)
ICC	0.163		0.166		0.137	
Note. ***$p < .001$						

Conditional model. Next the conditional models, the models that include all of the

covariates, were run. The conditional models for each age group were estimated at level-1 as

follows:

$$\log\left[\frac{\varphi_{ij}}{(1-\varphi_{ij})}\right] = \beta_{0j} + \beta_1(Age_{ij}) + \beta_2(ChronicIllness_{ij}) + \beta_3(Disability_{ij}) + \beta_4(Female_{ij})$$
$$+ \beta_5(MaritalStatus_{ij}) + \beta_6(White_{ij}) + \beta_7(Hispanic_{ij}) + \beta_8(Education_{ij})$$
$$+ \beta_9(MentalDisorders_{ij}) + \beta_{10}(AnyMisconduct_{ij}) + \beta_{11}(PriorAbuse_{ij})$$
$$+ \beta_{11}(PriorIncarceration_{ij}) + \beta_{12}(HoursinCell_{ij}) + \beta_{13}(TimeServed_{ij})$$
$$+ \beta_{14}(Property_{ij}) + \beta_{15}(Drug_{ij}) + \beta_{16}(PublicOrder_{ij})$$

and estimated at level-2 as follows:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(Federal_j) + \gamma_{02}(ProprotionOlder_j) + \gamma_{03}(ProprortionWhite_j)$$
$$+ \gamma_{04}(ProportionViolent_j) + \gamma_{05}(ProportionProgram_j) + \gamma_{01}(MeanHours_j)$$
$$+ u_{0j}$$

$\beta_{1j} = \gamma_{10}$
$\beta_{2j} = \gamma_{20}$
$\beta_{3j} = \gamma_{30}$
$\beta_{4j} = \gamma_{40}$
$\beta_{5j} = \gamma_{50}$
$\beta_{6j} = \gamma_{60}$
$\beta_{7j} = \gamma_{70}$
$\beta_{8j} = \gamma_{80}$
$\beta_{9j} = \gamma_{90}$
$\beta_{10j} = \gamma_{100}$
$\beta_{11j} = \gamma_{110}$
$\beta_{12j} = \gamma_{120}$
$\beta_{13j} = \gamma_{130}$
$\beta_{14j} = \gamma_{140}$
$\beta_{15j} = \gamma_{150}$
$\beta_{16j} = \gamma_{160}$

where γ_{00} is the expected log-odds of being victimized after controlling for all of the level-1 predictors in the model and, γ_{0n} represents the expected log-odds of being a victim corresponding to level-2 while holding constant the other predictors. For example, γ_{01} represents the expected log-odds of being a victim for inmates housed in a Federal facility compared to State inmates. γ_{n0} represents the expected change in the log-odds of being victimized corresponding to level-1 predictors while holding constant the other predictors in the model. For example, γ_{10} represents the expected log-odds of being victimized that is associated with a one year increase in age.

Table 4.11 presents the multilevel model for the full sample. For every one unit increase in age, the odds of victimization decreased by about 4%. The odds of victimization increased by 27% for inmates with a chronic illness and 34% for inmates with a physical disability, compared to inmates without a chronic illness or disability. The odds of victimization for females decreased by 46% compared to the odds for males. Inmates who were not married, White, and Hispanic had greater odds of victimization than those who were married, non-White, and non-Hispanic. Having a mental disorder increased the odds of victimization by 57%.

The odds of victimization for inmates with a rule violation increased by 273% compared to the odds for inmates without a rule violation. Having been victimized before prison increased the odds of victimization in prison by 44%. For inmates who have been previously incarcerated, the odds of victimization were 1.141 times the odds of inmates who have not been previously incarcerated. For every one unit increase in hours in one's cell and time served, the odds of victimization increased by 21% and 99%, respectively. The odds of victimization for an inmate serving time for a drug offense were 0.718 times the odds of inmates serving time for a violent offense.

At the prison level, one variable was significantly related to victimization. For a one unit change in the proportion of violent offenders, the odds of victimization for an inmate increased by 185%.

Table 4.11

Multilevel Binary Logistic Regression Predicting Victimization

	Full Model (n = 15,929)	
	OR	95% C.I.
Level-1 Covariates		
Age	0.965***	(0.958,0.971)
Chronic Illness	1.267***	(1.133,1.417)
Disability	1.344***	(1.176,1.536)
Female	0.538***	(0.430,0.673)
Marital Status	1.191*	(1.025,1.384)
White	1.211**	(1.084,1.355)
Hispanic	1.193*	(1.033,1.378)
Education	0.985	(0.878,1.104)
Mental Disorder	1.567***	(1.390,1.766)
Any Misconduct	3.734***	(3.273,4.259)
Prior Victimization	1.439***	(1.266,1.635)
Prior Incarceration	1.141*	(1.004,1.378)
Hours in Cell	1.206**	(1.065,1.365)
Time Served	1.989***	(1.845,2.145)
Property Offense[1]	0.904	(0.785,1.044)
Drug Offense	0.718***	(0.607,0.848)
Public Order	0.799	(0.639,1.000)
Level-2 Covariates		
Federal Prison	1.068	(0.818,1.396)
Proportion Older	0.575	(0.211,1.564)
Proportion White	0.985	(0.623,1.558)
Proportion Violent	2.851***	(1.839,4.419)
Proportion Program	0.829	(0.505,1.360)
Avg Hours in Cell	1.023	(0.990,1.058)
Constant	0.017***	(0.009,0.035)

*Note. *p< .05. **p < .01. ***p < .001*
[1] Violent offense is the reference category

Younger inmates. Table 4.12 presents the multilevel binary logistic regression models predicting victimization for younger and older inmates. Among younger inmates, for every one

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year increase in age, the odds of experiencing victimization are decreased by 4%, holding constant all other predictors. Inmates with a chronic illness and a physical disability were 1.278 and 1.331 times as likely to be victimized, respectively, compared to inmates without a chronic illness or disability. Females were less likely to be victimized, with their odds of victimization being 0.537 times that of male inmates. Inmates who are not married were 1.237 times as likely to be victimized as those who are married. For White inmates, the odds of being victimized were 1.231 times the odd of non-White inmates. The odds of being victimized for Hispanic inmates were 1.203 times the odds of non-Hispanic inmates. For inmates with a mental disorder, the odds of being victimized were 1.535 times the odds of inmates without a mental disorder. The odds of experiencing victimization for inmates who had a rule violation were 3.735 times the odds for those without a rule violation. Inmates who reported victimization prior to prison had odds of being victimized that were 1.490 times the odds of inmates who did not experience victimization. For each hour increase in one's cell, the odds of victimization are multiplied by 1.211. Similarly, for each additional month in prison the odds of victimization are multiplied by 2.008. Inmates serving time for a drug offense had odds of victimization that were 0.738 times the odds of those serving time for a violent offense.

Only one level-2 variable was significantly related to victimization. As the proportion of violent offenders in a facility increased from 0 to 1, the odds of victimization for an inmate increased by 213%.

Older inmates. Only individual-level predictors were related to victimization for older inmates. Having a physical disability increased the odds of victimization by 50%. Females' odds of victimization were 0.308 times the odds of males. Having at least a high school diploma increased the odds of victimization by 64% and having a mental disorder increased the risk of

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victimization by 97%. Inmates with a rule violation had odds of being victimized that were 3.103 times the odds of inmates without a rule violation. For each additional month spent in prison, the odds of victimization increased by 86%. The odds of victimization for property and drug offenders were 0.321 and 0.417 times the odds of violent offenders, respectively.

Model comparisons. To examine whether the regression coefficients of the two models were significantly different, interaction terms were created and run (not presented). The results indicated that the effect of education on misconduct significantly differs by age. More educated, older inmates faced greater odds of being victimized than others. Although education was not significant for younger inmates in the split models, the coefficient indicates that the odds of victimization for younger inmates with at least a high school diploma decreased 6% compared to inmates with less than a high school diploma. Conversely, the odds of victimization for older inmates with at least a high school diploma increased by 64%. No other significant interaction terms were detected.

Comparison of effect sizes. As previously noted, although fewer variables were significant predictors of victimization in the older inmate model, a comparison of the size of the coefficients in the models warrants discussion. The regression coefficients for older inmates suggest that some of the variables may have a stronger effect for this group. First, the effect size of the measures that were significant in both models were examined. Some variables seem to have a greater influence on victimization for older inmates. Disability was associated with an increased rate of misconduct for both age groups; however, this effect was greater for older inmates. Specifically, having a physical disability increased the odds of victimization for older inmates by 48% compared to a 33% increase for younger inmates. Compared to males, female's odds of victimization decreased by 69% for older inmates compared to a 46% decrease for

younger. For those with a mental disorder, compared to those without a disorder, the odds of victimization increased by 97% for older inmates compared to 54% increase for younger inmates. Serving time for a drug offense, compared to a violent offense, decreased the odds of victimization by 26% for younger inmates and 58% for older inmates.

Of the variables that were significant predictors for both younger and older inmates, time served appears to have a greater influence on victimization for younger inmates. For each month increase in time served, the odds of victimization increased by 101% for younger inmates compared to an 86% increase for older inmates.

Next, other measures significantly predicted the odds of victimization in the younger prisoners' model only, with the exception of education and property offenses, which predicted victimization for older inmates only. Several variables had a greater effect on victimization for younger inmates. For White inmates, the odds of victimization increased by 23% for younger inmates and 3% for older inmates. For Hispanic inmates compared to non-Hispanic inmates, the odds of victimization increased by 20% for younger inmates and 5% for older inmates. The odds of victimization for inmates who experienced victimization prior to prison increased by 49% for younger inmates and 17% for older inmates. The controlling offense variable had a greater influence on victimization for older inmates. Compared to inmates serving time for a violent offense, the odds of victimization for property offenders decreased by 6% for younger inmates and 68% for older inmates.

There were several variables that had opposite effects on victimization for younger and older inmates. Compared to those who are married, the odds of victimization for inmates who are not married increased by 24% for younger inmates and decreased by 13% for older inmates. For those with at least a high school diploma/GED, the odds of victimization decreased by 6% for

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younger inmates and increased by 64% for older inmates. For every unit one increase in the proportion of violent offenders in a facility, the odds of victimization increased by 213% for younger prisoners and decreased by 55% for older inmates.

Finally, some of the measures included in the analyses were not significantly related to victimization for either age group; however, the coefficients indicate a substantial impact on the odds of victimization. The effect of prior incarceration, public order offense, and proportion of older inmates appear to have a stronger effect for older inmates. The odds of victimization for inmates with a history of incarceration increased by 12% for younger inmates and 51% for older inmates, although not significant at the 0.05 level. For public order offenders compared to violent offenders, the odds of victimization decreased by 19% for younger inmates and 36% for older inmates. As the proportion of older inmates housed in a prison increased, the odds of victimization for an inmate decreased by 34% for younger inmates and 55% for older inmates.

The effect of being in a federal prison were in different directions for the two age groups. Being housed in a federal prison increased the odds of victimization for younger inmates by 8% and decreased the odds of victimization for older inmates by 36%. For every one unit increased in the proportion of White offenders within a facility, the odds of victimization increased by 2% for young inmates compared to a 41% decrease for older inmates. For every one unit increase in the proportion of inmates participating in programming, the odds of victimization decreased by 26% for younger inmates and increased by 135% for older inmates.

Table 4.12

Multilevel Binary Logistic Regression Predicting Victimization by Age

	Younger Inmates (n = 14264)		Older Inmates (n = 1469)	
	OR	95% C.I.	OR	95% C.I.
Level-1 Covariates				
Age	0.964***	(0.956,0.972)	0.971	(0.939,1.005)
Chronic Illness	1.278***	(1.137,1.436)	1.298	(0.821,2.052)
Disability	1.331***	(1.153,1.536)	1.479*	(1.001,2.186)
Female	0.537***	(0425,0.678)	0.308**	(0.141,0.674)
Marital Status	1.237*	(1.053,1.454)	0.870	(0.549,1.376)
White	1.231**	(1.095,1.384)	1.028	(0.679,1.556)
Hispanic	1.203*	(1.037,1.397)	1.048	(0.552,1.990)
Education	0.941	(0.833,1.063)	1.642*	(1.123,2.401)
Mental Disorder	1.535***	(1.353,1.741)	1.967**	(1.289,3.002)
Any Misconduct	3.735***	(3.251,4.291)	3.103***	(1.984,4.854)
Prior Victimization	1.490***	(1.303,1.705)	1.174	(0.749,1.840)
Prior Incarceration	1.123	(0.984,1.283)	1.511	(0.925,2.471)
Hours in Cell	1.211**	(1.063,1.378)	1.252	(0.775,2.024)
Time Served	2.008***	(1.854,2.175)	1.864***	(1.442,2.410)
Property Offense[1]	0.941	(0.811,1.093)	0.321**	0.152,0.678)
Drug Offense	0.738**	(0.621,0.877)	0.417*	(0.182,0.960)
Public Order	0.809	(0.640,1.022)	0.641	(0.277,1.485)
Level-2 Covariates				
Federal Prison	1.081	(0.818,1.429)	0.640	(0.304,1.351)
Proportion Older	0.665	(0.221,1.996)	0.448	(0.53,3.782)
Proportion White	1.019	(0.633,1.641)	0.587	(0.163,2.109)
Proportion Violent	3.126***	(1.983,4.929)	0.450	(0.122,1.657)
Proportion Program	0.745	(0.445,1.246)	2.347	(0.536,10.273)
Average Hours in Cell	1.020	(0.985,1.056)	1.017	(0.921,1.123)
Constant	0.003***	(0.001,0.006)	0.008**	(0.000,0.134)

*Note. *p< .05. **p < .01. ***p < .001*
[1] Violent offense is the reference

Discussion

The "greying" of the prison population has garnered much attention, yet the prison experiences of older inmates and how they compare to younger inmates is a relatively understudied area. The current study examined whether there were age differences in the factors

that predict misconduct and victimization in prison. These analyses provide several key findings. First, the findings support both the importation and deprivation and frameworks. Several importation factors were related to misconduct and victimization; however, there were fewer predictors for older inmates. Consistent with previous research, demographic measures were related to both outcomes for younger and older inmates and include age, race, marital status, and controlling offense. Several importation/routine activities risk factors were also related to the outcomes. For instance, having a physical disability increased the risk of victimization for both groups, but the effect was greater for older inmates. Among younger inmates only, having a mental illness, victimization history, and chronic illness increased the likelihood of both misconduct and victimization.

Additionally, several deprivation factors were related to misconduct and victimization. Specifically, time served and being housed in a facility with a greater proportion of violent offenders predicted victimization and misconduct for both older and younger inmates. Among the prison-level measures, the type of prison, proportion older, and proportion in programs predicted misconduct for younger inmates. These findings suggest that the prison environment influences the likelihood of misconduct and victimization, but may be more important for younger inmates. That is, context matters in the production of misconduct and victimization, but more so for younger inmates. Thus, in accordance with the importation perspective, age is related to risk of misconduct and victimization; however, it also appears to interact with the depriving nature of prison. As inmates adjust to life in prison, the depriving environment may have less of an effect on behavior, while younger inmates may be more affected by being in prison without adapting to such a life. Although the ICC for the older inmate model indicates that approximately 14% of the variation in victimization was in level-2, only one measure was

significantly related to the outcome. It is possible that the aggregated measures included in these analyses do not adequately capture the contextual factors that influence older inmates' victimization risk. For example, the characteristics of staff may be related to being written up for a rule violation. In fact, staff tenure is shown to be related to the decision to formally process rule violations. That is, officers with longer tenure are more likely to informally process rule violations (Howard, Winfree, Mays, Stohr, & Clason, 1994). Further, the type of unit (e.g., age segregated, protective housing) may influence victimization risk. Kerbs and Jolley (2007) found that older inmates were targeted by younger inmates; therefore, in facilities where older inmates are housed away from the general population the likelihood of victimization may lower.

Another finding is that not all of the predictors were related to the outcomes in the same way across the age groups. For example, being not married and being housed in a federal prison were risk factors in the victimization models for younger inmates, but were protective factors for older inmates. Additionally, being housed in a facility with a large proportion of violent offenders substantially increased the risk of victimization for younger inmates, but it decreased the risk of victimization for older inmates. To protect older inmates from being targeted by others, they may be housed in either age-segregated housing or some other form of protective housing. Thus, as the number of potential motivated offenders increases, older inmates may elect to move to segregated housing out of the fear of victimization (McCorkle, 1992), which reduces the risk of victimization by removing them from the general population. Age-segregated housing has been used as a way to increase the safety of older inmates (Kerbs & Jolley, 2009). Thus, where inmates are housed may explain why some of the measures are risk factors for younger inmates, but are protective factors for older inmates. Understanding the differences across age

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groups in the effect of certain factors can help identify what age-specific factors should be targeted to reduce the risk of either misconduct or victimization.

Third, one aim of this study was to examine the effect of physical health on misconduct and victimization. Specifically, it was expected that health would be related to the outcomes for older inmates more so than younger inmates. Chronic illness does influence the risk of misconduct and victimization; however, it significantly predicts the misconduct and victimization of younger inmates only. Specifically, younger inmates with a chronic illness are more likely to have a rule violation compared to older inmates. Additionally, having a chronic illness increases the risk of victimization for younger inmates. Although only significant for younger inmates, the size of the effects of chronic illness on misconduct and victimization are larger for older inmates. Certain chronic illnesses may affect physical functioning in a way that increases target suitability, thereby making them vulnerable to victimization. It appears that having a chronic illness not only increases target suitability, it also effects inmates' behavior. Young and older inmates differ in the precautions they take to prevent victimization. Older inmates tend to avoid areas where other inmates congregate, particularly younger inmates (Kerbs & Jolley, 2007; McCorkle, 1992). Thus, older inmates likely spend less time around others compared to younger inmates. It is possible that because younger inmates may spend more time around others they have greater opportunity to engage in misconduct and are also exposed to motivated offenders. Younger inmates with a chronic illness may act out in frustration because of difficulties getting around that stem from the illness or in response to having been victimized. Because older inmates have likely suffered from a chronic illness for a longer period of time than their younger counterparts, they may be better able to cope with the impairments associated with

chronic illness. Thus, their adjustment to life in prison with a chronic illness may make them less likely to act out in frustration.

Another aspect of health examined in the current study is physical disability, which was found to be a risk factor for victimization but not misconduct. For both age groups, having a disability increased the odds of victimization, but the effect was greater for older inmates. This finding indicates that inmates with a physical disability are more vulnerable to victimization; however, having a disability may make older inmates particularly vulnerable. For older inmates in particular, having a physical disability combined with physical limitations associated with old age may result in impaired physical functioning not experienced by younger inmates. As such, older inmates may be more vulnerable than their younger counterparts.

Fourth, for both age groups, misconduct and victimization are significantly related. Specifically, having experienced victimization in prison significantly increased the frequency of misconduct for both age groups. Likewise, having been written up for a rule violation significantly increased the odds of victimization for both groups. Indeed, of all of the predictors in the victimization models, misconduct had the strongest effect for both groups. These findings indicate that inmate behavior is indelibly tied to victimization experiences for both groups, although this relationship appears to be stronger for younger inmates. Both outcomes have implications for prison management. These findings indicate that a better understanding of the link between misconduct and victimization, especially given the concern for how inmates adapt and who is most at risk for victimization. Research is needed to better understand how misconduct influences victimization (and vice versus) and who is most at risk of engaging in misconduct and experiencing victimization.

The lack of many significant predictors for older inmates as compared to younger inmates may be indicative of two things: 1) the lack of power to detect significant effects and 2) the differential treatment of older inmates by correctional staff. First, it is important to note that although few variables significantly predicted misconduct and victimization for older inmates, the size of the effect of some of the variables were larger compared to the coefficients in the models for younger inmates. The fact that several predictors had a stronger effect for older inmates, but were not significant at the $p < 0.05$ level suggests a possible power issue. Compared to the approximately 14,000 younger inmates, there were only a little over 1,400 older inmates. In this case, reliance on significance would overshadow the fact that several measures have strong effects for older inmates. For example, although not significant, the odds of victimization for older inmates with an incarceration history increased by 51% compared to a 12% increase for younger inmates who had been previously incarcerated. The odds of victimization for older inmates with a chronic illness or a disability increased by 30% and 48% compared to a 28% and 33% increase for younger inmates, respectively. Similarly, for older inmates with a disability the expected odds of victimization increased by 30% compared to a 4% increase for younger inmates. Thus, it is possible that in future research, significant effects could be detected with a larger sample of older inmates.

It is important to note that the measure of institutional misconduct available in these data capture official sanctions (i.e., a write up for some rule violation). As such, another potential explanation for the lack of significant findings in the older inmate models may be the differential treatment of this group of inmates by correctional staff compared to younger inmates. Since misconduct is a measure of responses to inmates' behavior, it is possible that older inmates are seen in a more sympathetic light by correctional staff. Although correctional officers' perception

has received little attention, there is evidence to suggest that correctional officers perceive some inmates less favorably than others (e.g., Black inmates, inmates with mental disorders) (Callahan, 2004; Kropp, Cox, Roesch, & Eaves, 1989; Lavoie, Connolly, & Roesch, 2006; Poole & Regoli, 1980). If correctional staff view older prisoners more favorably than other inmates, they might be less inclined to formally write up older inmates. Additionally, because prisons are not designed for older inmates, staff may feel concerned for older inmates and treat them accordingly.

Overall, the findings of this chapter indicate that both individual-level characteristics and the prison environment affect the prison experience, which may in fact be different for older inmates. Age is an imported characteristic that interacts with the depriving nature of prison. Although the prison environment affects the prison experience for all inmates, its effects may be greater for younger inmates. An interesting finding here is the relationship between victimization and misconduct. The next chapter builds on this finding and further elucidates the relationship between experiencing victimization and offending in prison through the examination of the victim-offender overlap within the prison context. Specifically, in the next chapter I examine what factors predict victim-offender status. In the final chapter, policy implications and study limitations will be discussed.

CHAPTER V: VICTIM-OFFENDER OVERLAP IN PRISON

Introduction

Misconduct and victimization within prisons have received a substantial amount of research attention. Within the prison literature, however, offending (i.e., misconduct) and victimization have historically been examined as separate outcomes. Further, few studies examine the effect of misconduct on victimization or vice versa (for exception see: Teasdale et al., 2016; Wooldredge & Steiner, 2012). As the findings of the previous chapter suggest, inmate misconduct and victimization are significantly related. This finding is not surprising given the plethora of research on the victim-offender overlap in the community. Indeed, those who at risk of offending also have an increased of being victimized (Singer, 1981; TenEyck & Barnes, 2017). Within the criminological literature, research shows that one's participation in offending is a salient predictor of victimization (Jennings, Piquero, & Reingle, 2012; Lauritsen, Sampson, & Laub, 1991). Thus, it is surprising that the overlap between misconduct in prison and victimization has yet to be explored.

This chapter builds on the victimization and misconduct finding from the previous chapter. Despite the vast amount of research examining offending and victimization in prison, to date, there is not research examining the potential overlap within the prison context. That is, the victim producing potential of offending, or conversely the criminogenic potential of victimization, has yet to be explored. The findings of the previous chapter underscore the need for further research. As such, this chapter investigates three central questions: (1) does the victim-offender overlap exist within prisons? (2) what percentage of inmates are victims only, offenders only, both victims and offenders, or neither? and (3) what factors predict being a victim-offender?

Theoretical and Empirical Background

Early victimology research centered on victims' contribution to their own victimization. von Hentig (1948) was among the first to recognize the relationship between the victim and offender. He considered the role of the victim as a provoker of their victimization and attempted to identify characteristics that might increase victimization risk. Mendelsohn (1947) extended this idea by classifying victims into six categories based on the degree of victim culpability. The concept of victim precipitation emerged from these works, although Wolfgang (1957) was the first to empirically study victim precipitation using homicides. Wolfgang (1957) found that 26% of homicides were victim precipitated and that in these cases the victim was more likely to have a criminal history than the offender. Additionally, Wolfgang (1957) found that in victim-precipitated homicides the victim often knew the perpetrator, the victim and perpetrator were more likely to be male, and alcohol played a role in many of these cases.

Although early victimology research focused on the role of offending in the production of victimization, the field of criminology has largely moved away from investigating the role of victims in the contribution of their own victimization. Recently, however, researchers have begun to explore the shared commonalities of offenders and victims and found substantial overlap between victimization and offending. One explanation for the victim-offender overlap is that victims and offenders are the same (Hindelang et al., 1978; Singer, 1981). Lauritsen et al. (1991) found that 45% of delinquents reported victimization compared to 12% of non-delinquents. Similarly, Klevens, Duque, and Ramirez (2002) found that 45% of victims in their study were also perpetrators and 92% of perpetrators reported experiencing victimization in their lifetime. These findings indicate that a substantial proportion of offenders have experienced victimization.

Several theoretical perspectives have been used to explain the victim-offender overlap: subcultural theories and lifestyles/routine activity. Subcultural theories emphasize the role that culture and neighborhood play in creating opportunities for offending and victimization. Specifically, the subculture of violence perspective posits that some individuals adhere to a value system in which violence and deviance is supported (Wolfgang & Ferracuti, 1967). Violence is viewed as a way to end disputes and to gain respect. Neighborhood characteristics have also been tied to offending. In a socially disorganized neighborhood, the lack of available legitimate resources forces individuals to turn to other illegitimate opportunities (i.e., drug dealing, robbery, burglary) (Berg, Stewart, Schreck, & Simons, 2012; Sampson & Groves, 1989). The development of a violent subculture is a response to the lack of resources and legitimate opportunities available in economically disadvantaged neighborhoods (a response to social disorganization). Violence becomes a tool that is used to obtain the goals set by mainstream society.

In subcultures that justify violence, retaliation is expected and the victim may become the offender. The subcultural value system condones and may even expect persons who have been victimized to seek vengeance against the person who has wronged them (B. A. Jacobs & Wright, 2006). The code of the street dictates that one should respond, usually with violence, to interpersonal transgressions (Anderson, 1999). Similarly, offenders may become victims because they uphold beliefs that condone violence. This is in line with the notion of victim precipitation, in that offenders may experience victimization as a result of retaliation for their criminal behavior (B. A. Jacobs & Wright, 2006; Wolfgang & Ferracuti, 1967). Singer (1986) noted that victims often had criminal histories and that the best predictor of violent offending was having

been a victim of serious violence, after controlling for other factors that influence offending behavior. Thus, engaging in illicit activity increases the risk of victimization.

Another theoretical framework that has been used to explain the victim-offender overlap is lifestyles/routine activity. This framework is the dominant perspective used to explain the overlap. As discussed in the previous chapter, the lifestyles/routine activity framework posits that individuals' victimization risk is influenced by one's lifestyle and routine activities (Cohen & Felson, 1979; Hindelang et al., 1978). Lifestyle/routine activity perspective focuses on the role of risky lifestyles in creating opportunity that impacts the likelihood of victimization. That is, certain routine activities increase the risk of victimization because they increase target suitability, place individuals in proximity of motivated offenders, while at the same time taking them away from capable guardians.

In the same vein, routine activities can also increase the likelihood of offending. In an extension of this framework, Osgood, Wilson, O'Malley, Bachman, and Johnston (1996) developed a concept they referred to as "unstructured socializing." The authors applied the routine activity framework to explain delinquency and argued that the motivation to engage in delinquency is tied to the amount of time spent away from the home in unstructured activities with peers away from authority figures. Thus, as individuals spend more time in unstructured or unsupervised activities, the greater the likelihood of both victimization and offending (Johnson & Menard, 2012; Osgood et al., 1996).

Exposure to delinquent peers away from supervision increases the likelihood of delinquency, but also does not necessarily protect individuals from victimization. Similarly, Jensen and Brownfield (1986) asserted that criminal activity can be considered as a routine activity that increases the risk of victimization "because of the motives, vulnerability, or

culpability of people involved in these activities" (p. 87). For instance, offenders may be viewed

by other offenders as suitable targets or particularly vulnerable because their criminal lifestyle

takes them away from capable guardians and decreases the chances that individuals will report

victimization to police (Klevens et al., 2002).

The lifestyles/routine activities framework also asserts that victims and offenders are

likely to come into contact during social interactions, which may explain the victim-offender

overlap. The "principle of homogamy" posits that a disproportionate amount of social interaction

occurs among persons with similar lifestyles (Hindelang et al., 1978; Singer, 1981). The risk of

victimization increases as persons come into frequent contact with demographic groups that

contain a disproportionate share of offenders (Hindelang et al., 1978). That is, potential offenders

are more likely to interact socially with others who share the same demographic characteristics.

Insomuch as a person shares demographics with offenders, they will be more likely to be

spending time in routine activities that place them in proximity to each other. Indeed, research

shows that victims and offenders have similar demographic profiles. For example, persons who

are black, male, and younger are more likely to be victimized and to offend. Additionally, those

most likely to be victims and offenders typically live in urban areas (Jennings et al., 2012). Even

after controlling for demographic characteristics, offending behavior is directly related to the risk

of victimization. Indeed, several studies found that the strongest predictor of victimization is

offending (Berg & Loeber, 2011; Klevens et al., 2002; Lauritsen et al., 1991; Pyrooz, Moule Jr.,

& Decker, 2014; Sampson & Lauritsen, 1990; Singer, 1986; TenEyck & Barnes, 2017).

Similarly, Averdijk, Van Gelder, Eisner, and Ribeaud (2016) found that victimization affected

decision making which led to offending. Specifically, victimization was positively associated

with positive emotions towards violence, which lead to an increased likelihood of subsequent offending.

Tied to the principle of homogamy is the concept of ecological proximity to crime. Specifically, living in a neighborhood with high rates of crime increases the proximity to potential offenders and inherently increases the risk of victimization (Berg & Loeber, 2011; Miethe & McDowall, 1993). Sampson and Lauritsen (1990) found that proximity to violence was an important determinate of victimization, in that residing in an area with high crime rates increases the risk of victimization. Berg and Loeber (2011) found that violent offending had a direct effect on violent victimization risk, even after controlling for neighborhood disadvantage. Additionally, the authors found that residing in a disadvantaged neighborhood was positively associated with victimization. Individuals who engaged in violent offending and lived in high disadvantaged neighborhoods are had a heightened risk of victimization. (Hindelang et al., 1978; Lauritsen et al., 1991; Sampson & Lauritsen, 1990).

In addition to sharing a demographic profile, victims and offenders may also be acquainted with one another. Indeed, Mendelsohn (1947) noted that victims and offenders often know each other. Empirical studies of the victim-offender overlap find support for this assertion. For example, an examination of the victim-offender relationship shows that individuals are more likely to be victimized by an acquaintance (Sampson & Lauritsen, 1990). Additionally, the relationship between gender and acquaintance victimization was explained by offending behavior. Specifically, males were more likely to assault their acquaintances. This propensity to assault acquaintances may increase the likelihood of being the victims of retaliation, particularly for males.

In addition to explaining the victim-offender overlap, researchers have also examined how victims, offenders, and victim-offenders differ. Klevens et al. (2002) found that victims and offenders differed in the degree to which they engage in risky behaviors. For example, frequent and excessive substance use is shown to be more common among victim-offenders than victims (Klevens et al., 2002; Lauritsen et al., 1991; Sampson & Lauritsen, 1990; Schreck, Stewart, & Osgood, 2008). Additionally, victim-offenders are more likely to go out at night and spend time with delinquent peers compared to those who are victims only (Klevens et al., 2002; Schreck et al., 2008). Low self-control has been linked to both victimization and offending. Lower levels of self-control are shown to increase the likelihood of victimization (Pratt, Turanovic, Fox, & Wright, 2014; Schreck, Ousey, Fisher, & Wilcox, 2012) and offending (Anderson, 1999; Pratt & Cullen, 2000). Additionally. compared to abstainers, offenders have lower levels of self-control (Pulkkinen, Lyyra, & Kokko, 2009).

Schreck et al. (2008) found that age predicted individuals' role in violent crime, with older teens being more likely to be victim than an offender. Additionally, the authors found that lower educational attainment and lower levels of parental attachment predicted being a violent offender, but not a victim. van Gelder, Averdijk, Eisner, and Ribaud (2015) found that being dominant towards others predicted offending but not victimization. Low self-control and being male predicted victimization but not offending. One study found that illicit drug use only predicted being an offender (Mustaine & Tewksbury, 2000). Another way victims and offenders have been differentiated is by neighborhood characteristics. Specifically, Mustaine and Tewksbury (2000) found that living near a liquor store and in a neighborhood with disruptive neighbors was predictive of victimization but not offending. Living near a bar, convenience

store, vacant housed, and in a neighborhood with a high rate of crime predicted being an offender (Mustaine & Tewksbury, 2000).

Victim-offender overlap in prison. The previous chapter discussed at length the risk factors of both prison misconduct and victimization. Much the same way as in the community literature, the profile of inmates most likely to in offend in prison is very similar to the profile of those likely to experience victimization. For instance, younger inmates are more likely to engage in misconduct (Camp et al., 2003; Gendreau et al., 1997; Wooldredge, 1994) and experience victimization in prison (McCorkle, 1992; Wolff et al., 2009; Wooldredge, 1994, 1998). The likelihood of misconduct (DeLisi et al., 2004; Harer & Steffensmeier, 1996) and victimization (Lahm, 2009c; Wolff et al., 2009; Wooldredge & Steiner, 2012) is greater among non-White inmates compared to White inmates. Male inmates are more likely to engage in misconduct (Sorensen & Cunningham, 2010; Steiner et al., 2014) and experience victimization (Perez et al., 2010; Wolff & Shi, 2009). Inmates with a mental disorder are at an increased risk of victimization (Austin et al., 2006; Pare & Logan, 2011) and misconduct (Friedmann et al., 2008; Houser & Belenko, 2015; Houser et al., 2012). Compared to other conviction offenses, inmates incarcerated for a violent offense are more likely to engage in misconduct (Gendreau et al., 1997; Jiang & Fisher-Giorlando, 2002; Jiang & Winfree, 2006) and experience victimization (Teasdale et al., 2016).

Both the lifestyles/routine activity and subcultural frameworks can be used to explain the victim-offender overlap within prisons. According to this framework, misconduct may be a routine activity that influences the risk of victimization. Research shows that inmates who engage in misconduct are significantly more likely to experience victimization in prison (Teasdale et al., 2016). Based on the principle of homogamy, which posits that individuals who

share demographic characteristics are likely to interact socially, it is likely that inmates who engage in misconduct spend a substantial amount of time in close proximity to others with similar characteristics who engage in misconduct. Thus, misconduct may expose inmates to other potential offenders. Thus, rule violators may be viewed as suitable targets because they are less likely to report victimization to correctional staff.

Additionally, as Irwin and Cressey (1962) noted, the inmate code is the code of the street, therefore within prison, the inmate subculture may necessitate retaliatory responses to victimization. In this hyper-masculine environment, any transgressions or perceived transgressions may be viewed as requiring a response to preserve one's reputation. As such, inmates who strongly adhere to the code of the street may be more likely than others to engage in misconduct while incarcerated. Mears et al. (2013) found that street code beliefs were positively associated with violence during incarceration, indicating that individuals who strongly adhere to the street code are more likely to engage in institutional violence, which increases victimization risk. Indeed, research shows that inmates who engage in violent misconduct are more likely to experience victimization in prison (Teasdale et al., 2016; Wooldredge & Steiner, 2012).

In addition to this retaliatory process, within prison, victims may become offenders as they attempt to prevent future victimization. Short and Strodtbeck (1965) asserted that the threat of victimization may be the "motivating force" of violence either as a form of protection or self-defense (p. 257). Indeed research shows that inmates' efforts to reduce victimization risk often include carrying a weapon or acting aggressively (McCorkle, 1992). Furthermore, behavioral changes may be a consequence of experiencing victimization. The fear of future victimization may result in self-guardianship behavior, including lashing out at others, in order to prevent further victimization (McGuire, 2005).

These findings illustrate that in prison, offenders and victims share characteristics. Additionally, these commonalities suggest that some inmates are both victims and offenders. To date, the overlap between misconduct and victimization has not yet been explored and it is unknown what factors predict being both a victim and an offender and what factors may differentiate victims from offenders. Both outcomes have important implications for prison management. Thus, a better understanding of who is at risk of being both a victim and offender, just a victim, just an offender, or neither is warranted. The current study seeks the answer the following questions:

1. To what extent are inmates victims, offenders, or victim offenders (or neither) while incarcerated?

2. Are the risk factors the same for victims, offenders, and victim-offenders in prison?

    a. Does the prison environment impact the risk of being a victim, offender, or both?

Method

For the analyses in this chapter examining the predictors of victim-offender status, data from the *2004 Survey of Inmates in State and Federal Correctional Facilities* (SISFCF) were used (see Chapter 2 for a full description of the data). All inmates in both State and Federal facilities were included in the analyses (Prisons = 326, Inmates = 18,185).

Dependent variable. In this chapter, the outcome of interest is *victim-offender status*. This measure includes four categories that were created using the victimization and misconduct measures. The first category (*neither)* includes inmates who had not experienced victimization and had not been written up or found guilty of a rule violation since admission to prison. Second, is the *victim only* category, which consists of the inmates who reported victimization, but no rule violations. Third, is the *offender only* category, which consists of inmates who were written up

for a rule violation, but did not report victimization. The final category is the *victim-offender*, which consists of inmates who report being victimized and written up for a rule violation.

Individual level independent variables. To examine what factors predict victim-offender status, several predictors were included in the analyses in addition to those used in the previous chapter. A measure of *children* was created that measured whether inmates had any children (0 = no, 1 = yes). Respondents were asked how far the prison they were currently housed in was from their address at the time of arrest for the current offense. A binary variable, *distance*, was created that measures whether the prison was less than 100 miles from the prison (coded 0) or 100 miles or more (coded 1). *Homelessness* measured whether inmates were homeless at the time of arrest (0 = no, 1 = yes). A measure of *substance dependence* was also included. In the SISCF 2004, drug and alcohol abuse and dependence are defined by the DSM-IV (see Appendix C for survey items). Using the survey items, a dichotomous measure was created and coded 1 if inmates met the criteria for drug/alcohol abuse and dependence and 0 if neither criteria were not met. Other independent variables described in the Chapter 2 include *chronic illness*, *disability*, *mental disorder*, *prior abuse*, *prior incarceration*, *time served*, and *hours spent in one's cell*.

Individual-level demographic variables. Drawing from the prison misconduct and victimization literature, several demographic measures were also included. These measures include *age*, *race*, *Hispanic origin*, *sex*, *marital status*, *educational attainment*, and *controlling offense* (see Chapter 2 for full descriptions of the measures).

Prison-level variables. As noted in Chapter 4, the 2004 SISFCF does not include prison-level measures other than the type of facility (State or Federal), therefore individual-level variables were aggregated to produce 6 prison-level measures that capture the proportion of

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inmates within each facility. The measures include the proportion older, White, violent, in programs, and with a substance dependence problem. The final measure captured the average time, in hours, inmates in a facility spent in their cells.

Analytical procedure

Analyses for this chapter were conducted using a multilevel framework. The outcome of interest in this chapter is a discrete, categorical variable, therefore it violates the normality assumption of OLS regression. The appropriate regression model is multinomial logistic regression, which is a variant of the general linear model that incorporates nominal outcome variables with more than two categories (Hosmer & Lemeshow, 2000).

Multilevel model. Hierarchical Linear Modeling (HLM) was used to answer the proposed research questions to account for the nested structure of the SISFCF data. Because of the nested structure of the data, prisoners are nested within prisons, and the residuals are not independent (correlated errors), thus resulting in biased standard errors. HLM estimates unbiased standard errors by modeling a random intercept that captures the shared error variance within groups (Raudenbush & Bryk, 2002b). Because the outcome of interest is a multi-category nominal variable, Hierarchical Generalized Linear Modeling (HGLM), which accommodates nominal dependent variables was utilized. A multilevel multinomial logistic regression model was produced using HLM 7. The final model produced was a random-intercept model with separate random effects produced for each pair of logistic models.

The final analytical sample consists of 14,519 inmates. The maximum amount of missing cases for any one variable included in the analyses was 7%. As such, missing cases were listwise deleted. In the following section, the results of the analyses are presented. First, descriptive statistics for the sample are presented. Next, bivariate results between the predictors and

outcomes are presented. Finally, multilevel models predicting victim-offender status are presented.

Results

Sample description. Table 5.1 presents the percentage of inmates in each victim-offender category. Half of the inmates in the sample were neither victims nor offenders. Approximately 2% of inmates reported experiencing victimization, but did not receive a write up for a rule violation. Approximately 35% of inmates were written up for a rule violation, but had not experienced victimization. Almost 11% of the sample had experienced victimization and were written up for a rule violation.

Table 5.1

Descriptive Statistics for Victim-Offender Status

	%	N
Neither	50.02	9096
Victim only	2.29	417
Offender only	34.81	6330
Victim Offender	10.73	1951

Bivariate results. Table 5.2 presents the chi-square test examining the relationship between victim-offender status and the categorical predictors. Specifically, a greater percentage of inmates in the neither and victim categories were White, Hispanic, had at least a high school diploma, were incarcerated for a property or drug offense, and were housed in a federal prison compared to offenders and victim-offenders. Compared to inmates who were victims and victim-offenders, a greater percentage of inmates who were neither or offenders reported having children, were female, and were incarcerated for a drug offense.

Compared to the other categories, a greater percentage of inmates who were victims and victim-offenders had a chronic illness, physical disability, and were residing more than 100 miles from the prison. Additionally, victims and victim-offenders reported experiencing victimization prior to prison, being diagnosed with a mental disorder, and were incarcerated for a violent offense more often than those in the neither and offender categories. Compared to inmates in the neither and victim categories, a greater proportion of offenders and victim-offenders reported being homeless prior to prison, had a substance dependence problem, were not married, and had been previously incarcerated.

Table 5.2

Chi-Square Tests Examining the Relationship Between Victim-Offender Status and Predictors

Variable		Victim-Offender Status				χ^2
		Neither % (N)	Victim %(N)	Offender %(N)	Victim-off % (N)	
Chronic Illness	No	62.15(5651)	55.64(232)	60.60(3836)	54.69(1067)	41.96***
	Yes	37.85(3442)	44.36(185)	39.40(2494)	45.31(884)	
Disability	No	84.32(7670)	76.50(319)	83.52(5287)	78.52(1532)	52.64***
	Yes	15.68(1426)	23.50(98)	16.48(1043)	21.48(419)	
Homelessness	No	93.09(8169)	92.13(363)	91.11(5515)	88.46(1632)	51.08***
	Yes	6.91(606)	7.87(31)	8.89(538)	11.54(213)	
Distance	< 100mi	33.60(2946)	31.99(127)	33.18(2013)	29.98(557)	9.36*
	100mi +	66.40(5822)	68.01(270)	66.82(4054)	70.02(1301)	
Any Children	No	25.68(2329)	32.13(134)	31.68(1998)	44.20(857)	275.99***
	Yes	74.32(6739)	67.87(283)	68.32(4309)	55.80(1082)	
Prior Abuse	No	79.00(7173)	73.56(306)	73.67(4656)	67.13(1307)	146.51***
	Yes	21.00(1907)	26.44(110)	26.33(1664)	32.87(640)	
Mental Disorder	No	77.45(7030)	64.03(267)	71.39(4511)	63.36(1233)	208.67***
	Yes	22.55(2047)	35.97(150)	28.61(1808)	36.64(713)	
Substance Dep.	No	36.81(3127)	32.83(130)	29.56(1772)	25.30(467)	137.36***
	Yes	63.19(5369)	67.17(266)	70.44(4222)	74.70(1379)	
Female	Male	75.04 (6826)	88.25(368)	80.03(5066)	88.62(1729)	215.78***
	Female	24.96 (2270)	11.75(49)	19.97(1264)	11.38(222)	
Marital Status	Married	22.24(2020)	19.66(82)	15.29(967)	11.64(227)	188.20***
	Not Married	77.76(7063)	80.34(335)	84.71(5356)	88.36(1723)	
White	Non-White	47.87(4314)	39.95(165)	54.32(3413)	50.70(980)	79.75***
	White	52.13(4698)	60.05(248)	45.68(2870)	49.30(953)	
Hispanic	No	78.47(7138)	76.98(321)	84.91(5375)	82.16(1603)	107.16***
	Hispanic	21.53(1958)	23.02(96)	15.09(955)	17.84(348)	
Education	< HS	58.97(5362)	62.74(261)	67.50(4272)	72.07(1406)	186.15***
	HS	41.03(3731)	37.26(155)	32.50(2057)	27.93(545)	
Prior Incarceration	No	85.85(7634)	81.34(327)	80.09(4928)	77.20(1449)	131.61***
	Yes	14.15(1258)	18.66(75)	18.91(1225)	22.80(428)	
Offense	Violent	30.76(2713)	51.50(206)	50.87(3180)	69.25(1333)	1300.00***
	Property	26.63(2349)	22.00(88)	20.59(1287)	15.90(306)	
	Drug	29.72(2622)	17.50(70)	20.56(1285)	10.08(194)	
	Public Order	12.89(1137)	9.00(36)	7.98(499)	4.78(92)	
Federal	State	73.52(6687)	79.62(332)	85.67(5423)	91.13(1778)	515.71***
	Federal	26.48(2409)	20.38(85)	14.33(907)	8.87(173)	

*Note. *p < .05, ***p < .001*

Table 5.3 presents the results of the ANOVA models, which provide the mean differences in the levels of the covariates across victim-offender status. The results show that there are few differences between the mean values for each category.[22] The average age of inmates in the neither and victim only categories is greater than the average age of inmates who were offenders and victim-offenders. On average, victim-offenders spent more time in their cells than any other category. The average time served was substantially lower for inmates in the neither category compared to the other category, and victim-offenders, on average, spent substantially more time in prison than any other category. There were few differences in the means across the victim-offender categories for proportion of inmates who were older, White, in programs, and had a substance dependence problem. On, average, inmates in the neither category were in facilities with fewer violent offenders compared to inmates in the other categories. Conversely, on average, victim-offenders were housed in facilities that also housed a larger proportion of violent offenders, compared to inmates in the other three categories. Additionally, on average, compared to inmates in the other categories, victim-offenders tended to be housed in facilities where inmates spent more time in their cells.

[22] The significant *F* statistics are due to the large sample size (Cumming, 2011).

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Table 5.3

One-Way ANOVA Examining the Relationship Between the Victim Offender Overlap and Predictors

	Mean Values				
	Neither	Victims	Offenders	Victim Off	*F*
	M (SD)	M (SD)	M (SD)	M (SD)	
Level-1					
Age	36.86 (10.70)[a]	36.24 (10.59)[a]	34.72 (10.29)	34.40 (9.92)	65.39***
Hours in cell	12.14 (5.45)[b]	12.92 (5.90)[f]	12.77 (5.69)[f]	13.93 (6.30)	57.78***
Time served	29.99 (45.76)[b]	52.60 (65.83)[f]	56.13 (63.32)[f]	89.46 (79.68)	649.78***
Level-2					
Prop. Older	0.11 (0.08)[c]	0.11 (0.07)	0.10 (0.07)	0.11 (0.07)	4.34**
Prop. White	0.50 (0.16)[a]	0.50 (0.16)[d]	0.49 (0.17)[c]	0.48 (0.16)	20.20***
Prop. Violent	0.36 (0.23)[b]	0.47 (0.23)[f]	0.47 (0.22)[f]	0.57 (0.20)	647.32***
Prop. Program	0.68 (0.17)[e]	0.68 (0.16)[e]	0.71 (0.15)	0.70 (0.14)	44.91***
Avg Hours in Cell	12.39 (2.35)[b]	12.86 (2.57)[f]	12.67 (2.29)[f]	13.22 (2.37)	73.11***
Prop. Sub Dep.	0.67 (0.13)[e]	0.68 (0.12)	0.67 (0.11)	0.67 (0.11)	9.10***

Note. **p< .01, ***p<.001
[a] greater than offender and victim offender
[b] less than victim, offender, and victim-offender
[c] greater than offender
[d] greater than victim-offender
[e] less than offender and victim-offender
[f] less than victim-offender

Multilevel regression predicting victim-offender status

Unconditional models. The first step in multilevel modeling is to evaluate the amount of variability in victim-offender status that is attributed to the prison level. To do so, the unconditional (null) model is produced, which is the model that is estimated without predictors at either levels. The logit link function used is:

$$\eta_{mij} = log\left(\frac{\phi_{mij}}{\phi_{Mij}}\right) = log\left(\frac{Prob(R_{ij}=m)}{Prob(R_{ij}=M)}\right)$$

where η_{mij} is defined as the log-odds of falling into category *m* relative to that of falling into category *M* (reference category) (Raudenbush & Bryk, 2002b). The unconditional model is estimated to gauge the extent of the between-prison variation on the following three outcomes. At level 1 there are the three equations as follows:

$$\eta_{1ij} = \beta_{0j(1)}$$
$$\eta_{2ij} = \beta_{0j(2)}$$
$$\eta_{3ij} = \beta_{0j(3)}$$

At level 2, the prison-specific intercepts vary randomly over prisons:

$$\beta_{0j(1)} = \gamma_{00(1)} + u_{0j(1)}$$
$$\beta_{0j(2)} = \gamma_{00(2)} + u_{0j(2)}$$
$$\beta_{0j(3)} = \gamma_{00(3)} + u_{0j(3)}$$

where η_{1ij} is the log-odds of being a victim only (relative to neither a victim nor offender), η_{2ij} is the log-odds of being an offender only (relative to neither), and η_{3ij} is the log-odds of being both a victim and an offender (relative to neither) for a prisoner i in prison j. At level 1, $\beta_{0j(1)}$ refers to the expected log-odds of being a victim for prisoners in prison j, $\beta_{0j(2)}$ refers to the expected log-odds of being an offender for prisoners in prison j, and $\beta_{0j(3)}$ refers to the expected log-odds of being a victim-offender for prisoners in prison j, $\gamma_{00(m)}$ represents the log-odds of being in category m (victim, offender, or victim-offender) relative to being in the neither category, $u_{0j(n)}$ represents the level-2 error term (residual) for each pairwise comparison, which are assumed to be normally distributed with a mean of zero and variance $\tau_{00(m)}$.

Table 5.4 presents the unconditional models predicting each pair of multinomial logistic regression models. The neither category is used as the reference. The expected odds of being a victim is 0.239 relative to neither, averaging over the level-2 residuals. The expected odds of being an offender is 3.791 relative to being neither, averaging over the level-2 residuals. The expected odds of being a victim-offender is 5.037 relative to being neither, averaging over the level-2 residuals. The intraclass correlation coefficient for each model was calculated as $\frac{\tau_{00}}{\tau_{00}+\frac{\pi^2}{2}}$, where $\frac{\pi^2}{2} = 3.29$, assuming that the level-1 residuals follow a standard logistic distribution

(Snijders & Bosker, 2012). A standard logistic distribution has a mean of zero and a variance of

$\frac{\pi^2}{2}$. For the victim versus neither model, the ICC is 0.134, indicating that approximately 13% of

the variation in victimization is at level-2. For offenders, the ICC is 0.104, indicating that

approximately 10% of the variation in offending is at level-2. For victim-offenders, the ICC is

0.288, indicating that approximately 29% of the variation in the outcome is at level-2.

Table 5.4

Unconditional Model Predicting Victim-Offender Status with Neither Victim nor Offender as Reference

	Victim		Offender		Victim Offender	
	OR	95% C. I.	OR	95% C.I.	OR	95% C.I.
Intercept	0.239***	(0.208, 0.275)	3.791***	(3.471, 4.141)	5.037***	(4.388, 5.782)
Level-2 Variance	0.511***		0.382***		1.332***	
ICC	0.134		0.104		0.288	
Note. ***$p < .001$						

Conditional model. Next conditional models, the models that include all of the

covariates, were run. The conditional models for each category of victim-offender status were

estimated at level-1 as follows:

$$
\begin{aligned}
log\left(\frac{\phi_{mij}}{\phi_{Mij}}\right) = \ & \beta_{0j(1)} + \beta_{1j(1)}(ChronicIllness_{ij}) + \beta_{2j(1)}(Disability_{ij}) + \beta_{3j(1)}(Homelessness_{ij}) \\
& + \beta_{4j(1)}(Distance_{ij}) + \beta_{5j(1)}(Children_{ij}) + \beta_{6j(1)}(PriorAbuse_{ij}) \\
& + \beta_{7j(1)}(MentalDisorders_{ij}) + \beta_{8j(1)}(SubstanceDependency_{ij}) + \beta_{9j(1)}(Female_{ij}) \\
& + \beta_{10j(1)}(MaritalStatus_{ij}) + \beta_{11j(1)}(White_{ij}) + \beta_{12j(1)}(Hispanic_{ij}) + \beta_{13(j)}(Education_{ij}) \\
& + \beta_{14(j)}(Age_{ij}) + \beta_{15j(1)}(PriorIncarceration_{ij}) + \beta_{16j(1)}(HoursinCell_{ij}) \\
& + \beta_{17(1)}(TimeServed_{ij}) + \beta_{18(j)}(Property_{ij}) + \beta_{19j(1)}(Drug_{ij}) + \beta_{20j(1)}(PublicOrder)
\end{aligned}
$$

and estimated at level-2 as follows:

$$
\begin{aligned}
\beta_{0(1)} = \ & \gamma_{00(1)} + \gamma_{01(1)}(Federal_j) + \gamma_{02(1)}(ProprotionOlder_j) + \gamma_{03(1)}(ProprortionWhite_j) \\
& + \gamma_{04(1)}(ProportionViolent_j) + \gamma_{05(1)}(ProportionProgram_j) \\
& + \gamma_{06(1)}(MeanHours_j) + \gamma_{07(1)}(ProportionSubstanceDependence_j) + u_{0j}
\end{aligned}
$$

$$\beta_{1(1)} = \gamma_{10(1)}$$
$$\beta_{2(1)} = \gamma_{20(1)}$$
$$\beta_{3(1)} = \gamma_{30(1)}$$
$$\beta_{4(1)} = \gamma_{40(1)}$$
$$\beta_{5(1)} = \gamma_{50(1)}$$
$$\beta_{6(1)} = \gamma_{60(1)}$$
$$\beta_{7(1)} = \gamma_{70(1)}$$
$$\beta_{8(1)} = \gamma_{80(1)}$$
$$\beta_{9(1)} = \gamma_{90(1)}$$
$$\beta_{10(1)} = \gamma_{100(1)}$$
$$\beta_{11(1)} = \gamma_{110(1)}$$
$$\beta_{12(1)} = \gamma_{120(1)}$$
$$\beta_{13(1)} = \gamma_{130(1)}$$
$$\beta_{14(1)} = \gamma_{140(1)}$$
$$\beta_{15(1)} = \gamma_{150(1)}$$
$$\beta_{16(1)} = \gamma_{160(1)}$$
$$\beta_{17(1)} = \gamma_{170(1)}$$
$$\beta_{18(1)} = \gamma_{180(1)}$$
$$\beta_{19(1)} = \gamma_{190(1)}$$
$$\beta_{20(1)} = \gamma_{200(1)}$$

where $\gamma_{00(1)}$ is the expected log-odds of being a victim only relative to being in the neither category after controlling for all of the level-1 predictors in the model and $\gamma_{n0(1)}$ represents the expected change in the log-odds of being victimized corresponding to a level-1 predictor while holding constant the other predictors in the model. For example, chronic illness is the first variable in the level-1 equation and is represented by $\gamma_{10(1)}$, which is defined as the expected odds of being a victim only relative to being neither for an inmate with a chronic illness in prison j.

The equation above is for the model (η_{1ij}) that estimates the log-odds of being a victim only relative to neither. Two other identical equations were used to estimate the models for the (1) offender only versus neither and (2) victim-offender versus neither. Table 5.5 presents the results of the multilevel multinomial logistic regression predicting victim-offender status.[23]

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[23] The multilevel model with pooled variance was also estimated in STATA 14 and produced similar results.

Victims only. The first column of Table 5.5 compares inmates who were only victims to those who were neither victims nor offenders. Having a disability and a mental disorder significantly increased the odds of being a victim, compared to neither.[24] The odds of a female being a victim were 0.360 times the odds of a male being a victim, compared to being in the neither category. A one year increase in age was associated with a 65% decrease in the odds of being a victim relative to being neither. A one month increase in time served was associated with a 76% increase in the odds of being a victim compared to neither. At the prison level, only one predictor was significant. Residing in a prison with a higher proportion of violent offenders increased the odd of being a victim by 277% compared to neither.

Offender only. Model 2 presents the results for the model predicting being an offender only versus neither. Having a chronic illness, being homeless, and residing more than 100 miles from the prison significantly increased the odds of being an offender compared to being neither. Similarly, inmates with a history of victimization prior to prison, a mental disorder, a substance dependence problem, and those who were not married had greater odds of being an offender only relative to neither. Being White, Hispanic, and having at least a high school diploma decreased the odds of being an offender compared to neither. A one unit increase in age was associated with a 77% decrease in the odds of being an offender relative to being neither. For inmates who have been previously incarcerated, the odds of being an offender were 1.273 times the odds of those with no incarceration history, compared to being neither. A one unit increase in hours spent in one's cell and time served were associated with a 26% and 123% increase, respectively, in the odds of being a victim compared to neither. Compared to violent offenders, inmates incarcerated

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[24] The interpretation of the odds ratios for each model are for inmates in category *m* (victim, offender, or victim-offender) relative to being in neither, given that inmates are in either category *m* or neither (Hosmer & Lemeshow, 2000).

for property, drug, and public order offenses had lower odds of being an offender relative to being neither.

At the prison level, several predictors were significantly associated with the odds of being an offender relative to neither. The odds of an inmate in Federal prison being an offender are 0.593 times the odds of an inmate in State prison compared to being neither. Residing in a prison with a higher proportion of older inmates decreased the odds of being an offender by 71% compared to being neither. Residing in a prison with a higher proportion of violent offenders increased the odd of being an offender by 282% compared to being neither. A one unit increase in the average number of hours inmates in a facility spend in their cell was associated with a 5% decrease in the odds of being an offender compared to being neither.

Victim-offender. The results of the victim-offender model mirror those observed in the offender-only model. Having a chronic illness, having a physical disability, being homeless, and residing more than 100 miles from the prison significantly increased the odds of being a victim-offender compared to being neither. The odds of being a victim-offender for an inmate with children were 0.682 times the odds of inmates without children compared to being neither. Similarly, inmates with a history of abuse prior to prison, a mental disorder, or a substance dependence problem had greater odds of being a victim-offender only relative to being neither. The odds of being a victim-offender for an inmate who is not married were 1.264 times the odds of an inmate who is married, compared to being neither. A one year increase in age was associated with a 77% decrease in the odds of being a victim-offender relative to being neither.

For inmates who have been previously incarcerated, the odds of being a victim-offender were 1.349 times the odds of those with no incarceration history compared to being neither. A one unit increase in hours spent in one's cell and time served were associated with a 53% and

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362% increase, respectively, in the odds of being a victim-offender compared to being neither. Compared to violent offenders, inmates incarcerated for property and drug offense had lower odds of being a victim-offender relative to being neither.

At the prison level, several predictors were significantly associated with the odds of being a victim-offender relative to being neither. The odds of an inmate in Federal prison being a victim-offender are 0.557 times the odds of an inmate in State prison compared to being neither. As the proportion of older inmates housed in a facility increases, the odds of being a victim-offender decreases by about 79%. Residing in a prison with a higher proportion of violent offenders increased the odds of being a victim-offender by a factor of 10.848 compared to being neither. Residing in a prison with a higher proportion of inmates in programs increased the odds of being a victim-offender by 119% compared to being neither.

Table 5.5

Conditional Multilevel Multinomial Logistic Regression Predicting Victim-Offender Status (N = 319, n = 14,519)

	Victim[1]		Offender		Victim Offender	
	OR	95% C.I.	OR	95% C.I.	OR	95% C.I.
Level-1 Covariates						
Chronic Illness	1.159	(0.883,1.522)	1.099*	(1.006,1.200)	1.409***	(1.243,1.597)
Disability	1.595***	(1.218,2.089)	1.068	(0.954,1.196)	1.350***	(1.146,1.589)
Homeless	0.988	(0.686,1.424)	1.178*	(1.019,1.362)	1.410**	(1.148,1.732)
Distance from Home	1.088	(0.857,1.381)	1.121*	(1.022,1.231)	1.308***	(1.136,1.506)
Any Children	0.872	(0.673,1.129)	0.989	(1.221,1.512)	0.685***	(0.600,0.782)
Prior Abuse	1.214	(0.890,1.656)	1.218***	(1.091,1.360)	1.762***	(1.497,2.074)
Mental Disorder	2.076***	(1.592,2.706)	1.358***	(1.214,1.512)	1.955***	(1.672,2.286)
Substance Depend.	1.016	(0.779,1.326)	1.334***	(1.214,1.467)	1.650***	(1.420,1.916)
Female	0.360***	(0.224,0.578)	1.191	(0.955,1.486)	0.816	(0.613,1.084)
Marital Status	1.060	(0.757,1.486)	1.192***	(1.074,1.322)	1.264*	(1.053,1.518)
White	1.290	(0.988,1.683)	0.818***	(0.742,0.910)	0.929	(0.803, 1.076)
Hispanic	1.024	(0.759,1.380)	0.757***	(0.672,0.852)	0.950	(0.803,1.125)
Education	0.945	(0.757,1.181)	0.891*	(0.816,0.973)	0.920	(0.799,1.059)
Age	0.350***	(0.218,0.563)	0.232***	(0.192,0.280)	0.066***	(0.046,0.093)
Prior Incarceration	1.364*	(1.027,1.811)	1.273***	(1.141.1.419)	1.349***	(1.147,1.587)
Hours in Cell	1.143	(0.869,1.502)	1.264***	(1.139,1.401)	1.532***	(1.306,1.797)
Time Served	1.758***	(1.491,2.073)	2.230***	(2.049,2.428)	4.618***	(4.024,5.301)
Property Offense[2]	0.998	(0.736,1.353)	0.860*	(0.764,0.968)	0.774**	(0.646,0.926)
Drug Offense	0.747	(0.523,1.067)	0.832**	(0.744,0.929)	0.624***	(0.508,0.767)
Public Order	0.750	(0.476,1.183)	0.781**	(0.667,0.915)	0.737	(0.538,1.011)
Level-2 Covariates						
Federal Prison	1.248	(0.771,2.020)	0.593***	(0.454,0.773)	0.557***	(0.388,1.340)
Prop. Older	0.628	(0.129,3.045)	0.291*	(0.102,0.833)	0.213*	(0.052,0.872)
Prop. White	1.290	(0.565,2.946)	1.281	(0.752,2.180)	0.957	(0.519,1.764)
Prop. Violent	3.773**	(1.607,8.858)	3.817***	(2.136,6.290)	10.848***	(5.771,20.391)
Prop. Program	0.746	(0.332,1.676)	2.443**	(1.408,4.240)	2.187*	(1.075,4.452)
Avg. Hours in Cell	0.988	(0.931,1.049)	0.954**	(0.922,0.986)	0.983	(0.944,1.024)
Prop. Substance Dep.	2.201	(0.682,7.088)	1.041	(0.505,2.142)	1.092	(0.438,2.721)
Constant	0.053**	(0.007,0.424)	1.591	(0.767,3.746)	0.374	(0.105, 1.340)
Level-2 Variance	0.102		0.293***		0.331***	

Note. * p < .05, ** p <.01, *** p < .001

[1] The reference category for all models is neither victim nor offender

[2] Violent offense is the reference.

Discussion

  Researchers and prison administrator have focused a great deal of attention on inmate adaptation and experiences in prison. Inmate behavior can pose significant challenges to the operation and management of prisons. Further, a substantial number of inmates have experienced victimization during incarceration, which has prompted policies geared towards reducing the risk of victimization. Despite the vast amount of prison research, victimization and misconduct have only been examined as separate outcomes. What is unknown is whether there is overlap between inmates who are victims and those who are offenders and what factors are associated with being both a victim and an offender. The current study expands the literature on prison misconduct and victimization by examining the victim-offender overlap within the prison context. Specifically, the current study examined what factors predict being a victim only, offender only, or victim-offender relative to being neither a victim nor an offender.

  These analyses provide several key findings. First, half of the sample had not experienced victimization nor had they been written up for a rule violation. Very few inmates in the sample were victims who had not been written up for a rule violation. A little over one-third of the sample had a rule violation, but had not experienced victimization, and about 11% of the sample had experienced victimization and been written up for a rule violation.

  A great deal of concern for inmates' safety in prison as well has their adjustment to incarceration has spawned a plethora of research on inmate victimization and misconduct; however, the findings of this study indicate that most inmates were not victims and had not been written up for a rule violation. Although inmates in the neither category spent less time in prison than inmates in the other categories, they still serve an average of 30 months in prison, thus giving them opportunity to receive a write up or experience victimization. Further, the small

number of victims is surprising and suggests that some inmates who experience victimization are unable or unwilling to fight back. The fact that a greater percentage of inmates reported being both a victim and offender compared to only a victim suggests that retaliation may be occurring. Given the prison culture and the importation of attitudes and beliefs adherent to the code of the streets, when inmates experience victimization they may view retaliation as a necessary response. Conversely, engaging in misconduct, particularly against others, may result in victimization. Indeed, in this sample approximately 65% of victim-offenders had been written up for assaulting either an inmate or a staff member compared to only 28% of offenders only. Because offenders-only appear to be engaging in non-violent (less serious) misconduct, it is possible that this reduces the likelihood of retaliation against them and explains the substantial number of inmates who have a write-up, but have not experienced victimization. Thus, it may be that inmates engaging in serious misconduct against others (e.g., assault) are most at risk of being both a victim and offender—either because they are retaliating or face retaliation. It appears that while victimization may lead to retaliatory action that results in a write-up, inmate behavior may also increase victimization. Thus, effective strategies to reduce misconduct may help reduce its impact on victimization.

Second, the multilevel models show that there are several shared risk factors as well as factors unique to each category. Table 5.6 shows the variables that are significant across multiple categories. Although there are numerous shared predictors across the three categories, the magnitude of the effects are larger for the victim-offender category. Thus, the importation and deprivation factors have a strong effect on those who are both victims and offenders. Compared to offenders and victim-offenders, few factors predicted being a victim only relative to neither.

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There was only one predictor unique to being a victim only. Consistent with the prison victimization literature, males were more likely than females to be a victim relative to neither.

Third, several variables were related to being a victim and a victim-offender. Having a disability was a risk factor for both victims and victim-offenders. Specifically, it increased the odds of being not only a victim, but also a victim-offender relative to being neither. Having a physical disability appears to not only increase the risk of victimization, but also increase the risk of engaging in misconduct. For victimization, it is likely that inmates with a physical disability are viewed as suitable targets because they appear weaker or easier to overpower. The relationship between disability and victim-offender status suggests that inmates with a disability are experiencing victimization and also engaging in misconduct. It is possible that inmates with a disability engage in misconduct in order to prevent victimization. McCorkle (1992) noted that some inmates behave aggressively as a way to demonstrate to others that they are not weak and to prevent subsequent victimization. Additionally, misconduct may be the result of retaliation, especially for those inmates who adhere to the code of the street, which promotes retaliation. In the course of trying to prevent victimization, inmates with a disability may engage in behaviors that provoke others and increase the likelihood of victimization.

Table 5.6

Summary of Factors Shared Across Victim Offender Categories

	Victim	Offender	Victim Offender
Level-1 Covariates			
Chronic Illness		+	+
Disability	+		+
Homeless		+	+
Distance from Home		+	+
Any Children			-
Prior Victimization		+	+
Mental Disorder	+	+	+
Substance Depend.		+	+
Female	-		
Marital Status		+	+
White		-	
Hispanic		-	
Education		-	
Age	-	-	-
Prior Incarceration	+	+	+
Hours in Cell		+	+
Time Served	+	+	+
Property Offense		-	-
Drug Offense		-	-
Public Order		-	
Level-2 Covariates			
Federal Prison		-	-
Prop. Older		-	-
Prop. White			
Prop. Violent	+	+	+
Prop. Program		+	+
Avg. Hours in Cell		-	-
Prop. Substance Dep.			

Fourth, several factors were significantly related to being a victim, offender, and victim-offender. First, inmates with a mental disorder and those who have been previously incarcerated are more likely than their counterparts to be a victim, offender, or victim-offender relative to neither. The relationship between these factors and victim and offender status are consistent with

the previous literature. Specifically inmates with mental disorders are significantly more likely to be victimized in prison (Pare & Logan, 2011; Teasdale et al., 2016) as well as engage in misconduct (Houser & Belenko, 2015; Houser et al., 2012). Similarly, inmates with long criminal histories are at greater risk of both victimization and misconduct (Steiner et al., 2014). Thus, it is not surprising that mental disorder and incarceration history are risk factors for being both a victim and offender. Age is a protective factor for victims, offenders, and victim-offenders, with older inmates having lower odds of being in either of these categories relative to being neither. Older inmates may be less likely to be victims because of the type of precautionary behaviors in which they engage. Additionally, they may be protected by staff. McCorkle (1992) noted that while younger inmates tend to act out in ways that demonstrate their physical prowess, older inmates tend to avoid persons and areas where victimization is most likely to occur. Additionally, the adaptation literature shows that the longer inmates spend in prison the better they adjust to prison life. Inmates with numerous infractions may also be at risk of experiencing victimization by other inmates whom they have previously victimized. Inmates who have been in prison longer have had more opportunity to engage in misconduct as well as experience victimization.

Consistent with the previous literature on ecological proximity (Sampson & Lauritsen, 1990), exposure to violent offenders (being housed with a larger proportion of violent offenders) increases the risk of being a victim, an offender, or both. Drawing from the importation perspective, inmates serving time for a violent offense may be more likely adhere to the code of the street, and therefore may be more willing to use violence in prison (Mears et al., 2013). Also, if violent offenders are more likely to adhere to the subcultural value system that promotes retaliation, inmates housed in facilities with a large number of violent offenders may be more apt

to either respond to any transgressions with violence or retaliate when they are victimized. This finding suggests that proximity to potentially predatory inmates not only increases the risk of victimization, it also affects inmates' behavior.

In line with the prison misconduct literature, inmates who were White, Hispanic, had at least a high school diploma, and were incarcerated for a public order offense were less likely to be a victim-offender than their counterparts, relative to being neither. Additionally, of the various offenses inmates were incarcerated for, those with a violent offense are substantially more likely to engage in misconduct, which is consistent with the literature (Gendreau et al., 1997; Jiang & Fisher-Giorlando, 2002; Jiang & Winfree, 2006). Finally, at the prison level, as the average amount of time spent in one's cell increases within a facility, inmates' risk of being an offender decreases relative to being neither. In a more secure facility, inmates may have less opportunities to engage in misconduct.

Fifth, although only one prison-level variable was related to being a victim, several variables predicted being an offender or victim-offender. The findings suggest that, in prison, the factors that are related for offenders and victim-offenders are similar. This similarity in predictors may be indicative of retaliation. In other words, inmates who offend in prison may be experiencing victimization as others retaliate against them. After being victimized, inmates may be engaging in retaliatory behaviors that result in a rule violation. Offenders and victim-offenders shared several risk and protective factors. For instance, having a chronic illness, homelessness prior to prison, and distance from home were associated with an increased risk of being an offender and a victim-offender. Prolonged duration of chronic illness can affect physical functioning, which may make it difficult for inmates to complete prison activities of daily living (e.g., standing in line or dropping to the floor quickly). It also increases one's

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vulnerability to victimization. Thus, inmates with a chronic illness may accrue write-ups for misconduct as a result of acting out in frustration or as a response to being victimized. Homelessness and distance from home are likely tied to social support, which affects inmate behavior. For both homeless inmates and those housed far away from home, without social support the pains of imprisonment may increase the likelihood of misconduct, which may increase the risk of retaliation by others (Cochran, 2012; Eyrich, Pollio, & North, 2003).

Several importation/routine activities factor were also related to being an offender or victim-offender. Inmates who were not married, those with a history of abuse, and those with a substance dependence problem had greater odds of being an offender or a victim-offender. Inmates incarcerated for a property or drug offense had lower odds of being an offender or victim-offender compared to violent offenders. As time in one's cell increased, so did the risk of being an offender or victim-offender. It is possible that the amount of time spent in the cell is the result of inmate behavior, in that, as a result of misconduct individuals are moved to more secure housing. Inmates incarcerated for a property or drug offense had lower odds of being an offender or victim-offender compared to violent offenders. The literature shows that violent offenders are more likely to engage in misconduct and be victimized in prison. The principle of homogamy suggests that violent offenders may be more likely to be exposed to other violent offenders than other types of offenders, either because of shared characteristics or because they are housed in the same facility, which places them at risk of being victimized and engaging in misconduct. Furthermore, violent offenders may have stronger adherence to the code of the streets, which likely affects their behavior inside of prison (Mears et al., 2013). Thus, being exposed to other offenders who share the same attitudes towards violence and retaliation may increase the likelihood of being victimized as the result of misconduct.

The prison context also affects the risk of being an offender or victim-offender. For instance, inmates in federal prisons are less likely than state prisoners to be an offender or victim-offender. The majority of inmates serving time in a federal facility are drug offenders (36% in this sample) and given that compared to violent offenders, drug offenders are less likely to engage in misconduct, being housed in facility where inmates are less likely to break the rules might influence individuals' behavior. Being in a prison with a greater proportion of older inmates decreases the likelihood of being an offender or victim-offender. Generally, older inmates are less likely to engage in misconduct or experience victimization. As Osgood et al. (1996) noted, exposure to delinquent peers influences the likelihood of delinquency. As such, less exposure to rule violators may reduce the likelihood of engaging in misconduct, thereby also reducing the likelihood of victimization as the result of retaliation by others.

Sixth, the only factor uniquely and significantly related to being a victim-offender is having children. Inmates who reported having any children had lower odds of being a victim-offender than those without children relative to being neither. Inmates with children may be less likely to engage in routine activities that increase the risk of both victimization and misconduct. Reuniting with their children may be the goal of inmates and it may act as a form of informal social control (Hart, 1995).

Drawing on the lifestyles/routine activity framework, it is clear that certain inmate characteristics are related to victim-offender status. For example, it is possible that males, inmates with a chronic illness, with a disability, a history of abuse, and a mental disorder are viewed as suitable targets, making them more vulnerable to victimization than their counterparts. Further, the greater percentage of victim-offenders among these inmates compared to their counterparts may indicate retaliatory responses to victimization. Additionally, inmates with an

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incarceration history and those in state prisons may be more predatory than their counterparts, as indicated by the greater percentage who were offenders and victim-offenders. Thus, it is likely that as a result of their misconduct these inmates might be more likely to be retaliated against by others.

Although the current study extends the literature on prison misconduct and victimization, it is not without its limitation. First, very few inmates were in the victim only category, which may explain the small number of significant predictors in that model. Moreover, because of the low frequency of victims, it was not possible to examine gender differences in the risk factors. Future research should consider potential gender differences. Second, because of the cross-sectional nature of the data, there is no time ordering of the victimization and misconduct measures. As such, it is unclear whether individuals first experienced victimization and then retaliated against the perpetrator. If victimization leads to offending, then it may be that individuals feel obligated to retaliate. Drawing from importation theory (Irwin & Cressey, 1962), inmates bring attitudes and beliefs with them into prison. Thus, inmates who adhere to the street code may be more likely to retaliate. As Anderson (1999) noted, the code of the street dictates that individuals seek vengeance against those who have wronged in order to protect their reputation. This code may be why there are so few individuals who are just victims. Thus, when people are victimized they respond. Conversely, the routine activity framework suggests that the nature of offending places individuals at risk for victimization. As such, it is possible that inmates who engage in misconduct, especially those who assault others, may be more likely to be retaliated against. Future research should attempt to establish time ordering to provide a better understanding of the processes that lead to becoming both a victim and offender.

The current study found that there is in fact a victim-offender overlap within the prison context. Second, offenders and victim-offender share numerous risk and protective factors. The numerous shared risk factors for offenders and victim-offenders suggests that offending may impact victimization risk (and vice versa). Policy implications for the current study will be discussed in the next chapter.

CHAPTER VI: DISCUSSION

Overview

What factors influence inmates' response to prison? Over the past several decades, researchers have sought to answer this question. Both the depriving nature of prison and individual characteristics that inmates bring into prison with them have been shown to influence how inmates adjust to life in prison and respond to the pains of imprisonment. This dissertation examined what factors influence misconduct and victimization. Prior to this study, research focused on traditional deprivation and importation risk factors to explain misconduct. This study extended the literature in several ways: (1) it used a large sample of nationally representative inmates surveyed across five survey periods to examine age and cohort effects, (2) examined whether the risk factors of misconduct and victimization were age invariant, and (3) investigated the relationship between being both a victim and offender in prison. In this chapter, I review the key findings across the three papers. I also discuss the implications of this research. I then outline the major limitations of the research. Finally, I discuss some directions for future research that might further out understanding of misconduct and victimization in prison.

Review of key findings and implications

Across all of the studies, the findings provide support for both the deprivation and importation frameworks' ability to explain misconduct. That is, both prison and inmate characteristics predict being written up for a rule violation. First, the year of admission to prison is related to misconduct. Although not directly tested, the relationship between year of admission and misconduct suggests that sentencing may influence inmate behavior. Contrary to the previous literature (Bales & Miller, 2012; Emshoff & Davidson, 1987), inmates admitted to prison during the years when indeterminate sentencing was the dominate sentencing scheme had

a greater rate of misconduct than those incarcerated during the determinate sentencing era. One possible explanation for the cohort findings is that inmates with less rigidly defined sentence lengths (e.g., shorter term inmates) may be more at risk of engaging in misconduct, a finding that is consistent with the literature on long-term inmates and misconduct (Cunningham & Sorensen, 2006b; Flanagan, 1980; Morris et al., 2010). This finding also suggests that the type of sentencing policy under which inmates are incarcerated may influence behavior in prison. In particular, inmates with explicit release dates may be more apt to adapt to prison as they face long sentences. It is possible that sentence length rather than the punitiveness of the sentencing policy influences inmate behavior. Another explanation for the cohort effects may be the changes in the inmate population. With the increase in the prison population came the increase in drug offenders and older inmates, two groups who have historically had lower rates of misconduct. Thus, having a greater number of inmates housed in prison who have a lower propensity to violate rules may account for the lower rate of misconduct observed in the more recent cohorts.

Second, age effects explain misconduct and victimization. Chapters 3 and 4 both show that age is related to misconduct. In Chapter 3, the findings indicate that across survey periods, older inmates have lower rates of misconduct than younger inmates. That is, the age differences in the rate of misconduct hold across time and regardless of cohort membership. This finding is consistent with the studies using cross-sectional prison data. Further, the results suggest the occurrence of a process over the life course similar to the age-crime curve, in which the rate of misconduct is greatest for young inmates and gradually declines as inmates age. Although the rate of misconduct is lowest among the oldest inmates, some older inmates do engage in misconduct.

Chapter 4 extended the findings of the first study by examining whether the risk factors for misconduct and victimization are age invariant. The results show that although the prison experience affects all inmates, it may differentially affect older inmates. These findings also have implications for interventions in prison. The difference in the size of the coefficients for the two age groups suggests that administrators should consider the factors related to misconduct and victimization that are unique to each age group. Furthermore, not all of the variables operate in the same way for the two age groups. For instance, not being married increased the risk of victimization for younger inmates but decreased the odds of victimization for older inmates. In general, being married is shown to reduce the likelihood victimization (Hensley et al., 2003; Teasdale et al., 2016) and misconduct (Jiang & Winfree, 2006; Morris & Worrall, 2010; Steiner et al., 2014). Being married may provide inmates with a form of social support that buffers inmates from the strain of prison. For younger inmates who are not married this lack of social support may make it more difficult for them to adapt to prison and result in disruptive behaviors that place them at risk of victimization, whereas older inmates who have been incarcerated longer may be better able to adjust to prison even without this form of social support. Thus, interventions that seek to reduce or prevent misconduct and victimization may need to consider the risk factors unique to older inmates. For example, encouraging visitation of loved ones can help to foster relationships and increase social support throughout inmates' incarceration. Additionally, support groups for younger inmates who are not married may provide inmates with an outlet for coping with the strain of prison.

The results for Chapter 4 also show that for both age groups, misconduct predicts victimization and vice versa. Thus, prison victimization and misconduct are inextricably linked. Chapter 5 shows that there are indeed inmates in prison who experienced victimization and also

engaged in misconduct. Furthermore, offenders and victim-offenders shared numerous risk factors. That is, some of the factors associated with engaging in misconduct are also associated with being both a victim and rule breaker. Given the number of shared risk factors between offenders and victim-offenders, prison interventions that target inmates who engage in misconduct may also be effective at reducing victimization risk. Drawing on the subculture of violence literature, the results of the victim-offender study suggests that retaliation is occurring in prison. That is, those who engage in misconduct may be experiencing victimization as a result of retaliatory actions by others. The greater number of victim-offenders compared to victim-only inmates highlights the importance of considering the role of inmate behavior in the production of victimization risk. To combat victimization, prison administrators should identify inmates most at risk of misconduct, particularly for infractions against others. Indeed, the results in Chapter 4 show that even after controlling for known risk factors, having been written up increased the odds of victimization by more than 200%. Reducing the likelihood of rule breaking behavior may also reduce victimization risk by preventing behaviors that may elicit retaliatory actions from others.

Limitations

Although certain limitations of the current studies were discussed throughout the dissertation, this section summarizes a few key concerns. First, none of the *Survey of Inmates* datasets include measures of facility characteristics. General support for the deprivation framework indicates the prison environment influences inmate responses to prison as well as other experiences. To account for the characteristics of the facilities, aggregate measures were created in the second and third papers (age and victim-offender overlap). In the 1979, 1986, and 1991 inmate surveys there is no facility identification variable. Because of this omission, I was

unable to aggregate inmate characteristics to get a sense of the changing nature of the prison population. The shift in sentencing policies influenced the rapid expansion of the prison population. Mass incarceration resulted in both changes in the makeup of the inmate population and facilities (e.g., prison crowding). Thus, inclusion of direct measures of prison characteristics, such as staff characteristics, prison capacity, and architecture in different survey periods could further our understanding of how prison has changed over time and whether the changes at the prison level influence inmate behavior.

Second, the misconduct measure used across all of the chapters captures official write ups. In other words, it is a measure of official responses to rule violations, but not necessarily a measure of the amount of rule breaking in which inmates engage. The number of write ups reported by inmates may not reflect the true volume of rule breaking or an accurate recall of the number of official write ups. A measure of the actual number and types of rules inmates have violated is needed to better understand what influence behavior rather than the response to the behavior.

Third, in the 2004 *Survey of Inmates* data the size of the sample for some key variables may have contributed to the lack of significant findings in some of the models. The small number of inmates in the older inmate and victim-only groups may have contributed to the few significant predictors in the model and suggests a potential power issue. That is, there may have been too few cases to detect significant effects. Indeed, the age-specific models showed that for some variables the coefficient was greater for older inmates even though the relationship was not significant at the $p < 0.05$. Thus, replicating the models in this dissertation with a larger sample size may result in more variables being significantly related to the outcomes.

Fourth, there are no direct measures of type of sentencing policy under which inmates were sentenced. Instead, cohorts measure when inmates entered prison. The use of admission year with national level data may explain the lack of support for the previous studies on misconduct and determinate sentencing. As noted previously, other studies examining the relationship between determinate sentencing and misconduct utilized data from a single state, which allowed the researchers to identify when a policy was implemented. In the data used in the current study there is no way of knowing which state inmates were sentenced in; therefore, while year of admission gives us a general sense of the time period in which they were sentenced, the specific sentencing policy cannot be identified. Furthermore, during the shift in sentencing, prisons underwent changes in the prison population and correctional staff, which may have influenced both inmates' opportunity to engage in misconduct and staff's willingness to report rule violations. Thus, it is possible that although inmates incarcerated during the "get tough" era may not have had a disincentive to engage in misconduct, the changes in the prison environment may have influenced being written up more so than the type of policy they were incarcerated under.

Directions for future research

Although this dissertation added to the literature on misconduct and victimization, there still remains some unanswered questions. First, in the investigation of cohort effects, I only examined when inmates were admitted to prison. Despite the inconsistency between my findings and the previous research on misconduct and determinate sentencing (Bales & Miller, 2012), the evidence suggests that sentencing policies do influence inmate behavior. The question that remains is what type of sentencing policy (e.g., sentencing guidelines, mandatory minimums, truth-in-sentencing) or combination of policies have the greatest impact on inmate behavior? To

answer this question state data are needed to identify which policies were operating at the time when the cohorts were admitted to prison. Not all states eliminated indeterminate sentencing. Rather, some forms of determinate sentencing were implemented in conjunctions with indeterminate sentencing (Bureau of Justice Assistance, 1998). The combination of sentencing policies operating in a state influences the length of sentences imposed and when inmates are released from prison. Thus, differences in sentencing practices at the state level may influence the pattern of inmate misconduct.

Second, the misconduct variable in these data captures the frequency of writes up, which is a measure of an official response to rule violations. Thus, it is still unclear if the volume of rule breaking is truly different across the various groups examined in this dissertation. That is, do inmates in the 1903-1975 cohort break more rules than inmates in the 1980 cohort? The results simply indicate that inmates in the 1903-1975 cohort had a greater number of write ups than the 1980 cohort, which is not necessarily an indication of the volume of inmate rule breaking.

Relatedly, it is unclear if the differences in misconduct observed in Chapters 3 and 4 (cohort and age) reflect differential responses to the rule breaking of different groups of inmates. For example, older inmates reported fewer write ups compared to younger inmates. Further, fewer variables predicted the misconduct of older inmates, which may reflect correctional staff's willingness to overlook the rule breaking of older inmates. Past research indicates that correctional officers tend to write up certain groups of inmates more than others (Hewitt et al., 1984; Poole & Regoli, 1980); therefore, it is possible that observed differences in this research reflect differences in rule enforcement. Because these data do not include measures of correctional staff characteristics, it is unclear what factors may influence the decision to formally write up (or not) inmates. Accordingly, research is needed to investigate what influences

correctional staff decision making. Additionally, the lack of significant prison-level/deprivation

predictors suggests the need for better deprivation measures. For instance, the type of unit older

inmates are housed in may influence their outcomes. Being housed in age-segregated housing

may reduce the risk of victimization by removing older inmates from the general population and

away from the younger inmates who might target them (Kerbs & Jolley, 2007). Conversely,

being in specialized housing increases the chances of being written up for a rule violation since

inmates may be under a greater level of supervision.

Third, I rely on secondary data. As a result, the prison-level measures included in the

analyses may not adequately reflect the characteristics of the facilities. The measures included

are aggregate measures of the inmate population. Although the measures provide a description of

who is housed in a facility, there are other variables that may more accurately capture the

depriving nature of prisons. For instance, measures of the facility capacity and the architectural

design of the facility could provide insight into how the physical environment influences

adaptation. These measures may have better predictive power than aggregate measures of inmate

characteristics. Changes in facility designs and inmate classification after the shift towards

determinate sentencing may have influenced the opportunity to engage in misconduct. Prison

crowding has impacted the ability of correctional administrators to accurately classify (Clements,

1982). To the extent that prisoners are over-classified into more secure facilities, the opportunity

for misconduct would be lower.

Fourth, it is possible that the various risk factors of victimization and misconduct

identified in this dissertation have an additive effect on inmate outcomes. That is, having more

than one characteristic that increases the risk of victimization or misconduct may greatly

influence inmates' experiences. For example, having a disability, chronic illness, and mental

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disorder may substantially increase the risk of victimization compared to possessing only one of these characteristics. Indices have been used to quantify personal vulnerability and identify who to target for intervention (Prince-Embury, 2011). Vulnerability indices may help to shed light on what places inmates at an increased risk of victimization or misconduct. Future research should examine whether different types of vulnerability indices explain inmate experiences and behavior.

Conclusion

This dissertation examined areas of misconduct and victimization that have not received much attention in the prison literature. Despite the vast amount of literature in these areas, the dissertation highlights the need for more research examining factors that influence inmates' outcomes beyond the traditional importation and deprivation factors. To further our understanding of inmate behavior and experiences, more research is needed on the experiences of inmates in special populations relative to the general population of inmates, and on how differences in sentencing may influence these experiences. This dissertation serves as only the beginning to understanding the experiences of older inmates and the link between misconduct and victimization.

APPENDIX A

Effective date (and repeal date) of sentencing policies by state as of 2008[1]

	Presumptive sentencing guidelines	Voluntary sentence guidelines	Statutory presumptive sentencing	Determinate sentencing	Truth in Sentencin	Three strikes
Alabama		2006				
Alaska			1980			
Arizona			1978	1994	1994	
Arkansas		1994	1994			1995
California			1977-07	1977	1994	1994
Colorado			1979	1979-85		1994
Connecticut				1981-90	1995	1994
Delaware		1987		1990	1990	
Florida	1994-98	1983-93		1983	1995	1995
Georgia					1995	1995
Hawaii			1965			
Idaho			1987			
Illinois				1978		
Indiana			1977-05	1977		1994
Iowa			1907		1996	
Kansas	1993			1993	1993	1994
Kentucky						
Louisiana		1992				1994
Maine				1976	1995	
Maryland		1983				1994
Massachusetts		1996				
Michigan	1999	1984-98			1994	
Minnesota	1980			1980	1993	
Mississippi			1995; 2001	1995	1995	
Missouri		1997			1994	
Montana			1977			1995
Nebraska						
Nevada						1995
New Hampshire						
New Jersey			1979-05			1995
New Mexico			1979	1979		1994
New York			1998		1995	
North Carolina	1994		1981-94	1981	1994	1994

State						
North Dakota					1995	1995
Ohio	1996-06			1996	1996	
Oklahoma	1999-99					
Oregon	1989			1989	1995	
Pennsylvania	1982				1991	1995
Rhode Island			1993			
South Carolina						1995
South Dakota					1996	
Tennessee	1989				1995	1995
Texas						
Utah		1985			1985	1995
Vermont					1995	
Virginia		1991		1995	1995	1994
Washington	1984			1984	1984	1996
West Virginia						
Wisconsin		1985-94; 2000-09		2000	1999	1994
Wyoming						

[1] Sources: (Harmon, 2013a; Stemen & Rengifo, 2012)

APPENDIX B

Negative binomial regression predicting the frequency of misconduct without exposure				
	Model 1		Model 2	
Variable	IRR	95% CI	IRR	95% CI
Age				
22-27	0.956***	(0.905,1.011)	0.668***	(0.635,0.702)
28-32	0.698***	(0.660, 0.739)	0.447***	(0.424,0.419)
33-37	0.587***	(0.553, 0.623)	0.323***	(0.305,0.342)
38-42	0.497***	(0.466,0.531)	0.265***	(0.249,0.283)
43-47	0.378***	(0.349,0.408)	0.176***	(0.163,0.190)
48-52	0.280***	(0.253,0.309)	0.125***	(0.113,0.137)
53-57	0.224***	(0.196,0.256)	0.098***	(0.087,0.114)
58-62	0.198***	(0.166,0.237)	0.090***	(0.076,0.107)
63-67	0.115***	(0.089,0.148)	0.048***	(0.038,0.063)
68-72	0.084***	(0.055,0.126)	0.043***	(0.028,0.065)
73-77	0.102***	(0.055,0.191)	0.047***	(0.026,0.086)
78-89	0.011***	(0.002,0.060)	0.007***	(0.001,0.038)
Cohort				
1903-1975	14.228***	(12.884,15.711)	2.287***	(2.080,2.516)
1976-1980	4.988***	(4.683,5.312)	2.158***	(2.022, 2.304)
1981-1985	5.631***	(5.294,5.990)	1.444***	(1.352,1.542)
1986-1990	3.774***	(3.539,4.025)	1.157***	(1.083,1.237)
1991-1995	3.217***	(3.016,3.431)	1.243***	(1.163,1.328)
1996-2000	2.252***	(2.106,2.409)	1.289***	(1.204,1.381)
Female			1.363***	(1.309,1.419)
Not Married			1.427***	(1.369,1.489)
High School			0.845***	(0.818,0.873)
White			0.953**	(0.924,0.982)
Military			0.884***	(0.843,0.928)
Prior Incarceration			1.489***	(1.443,1.537)
Time served			1.957***	(1.933,1.980)
Offense				
Property			0.879***	(0.847,0.913)
Drug			0.600***	(0.572,0.630)
Public Order			0.743***	(0.693,0.796)
Constant	1.232***	(1.159,1.310)	0.370***	(0.341,0.402)
Dispersion Parameter	4.288***	(4.226,4.350)	2.979***	(2.933,3.027)
N		66,788		64,950
Note.				

APPENDIX C

In the SISCF 2004, drug and alcohol abuse and dependence are defined by the DSM-IV. Inmates were asked if they any symptoms for either abuse or dependence in the 12 months prior to their current incarceration (Karberg & James, 2005; Mumola & Karberg, 2006).

Substance abuse symptoms: The criteria for drug and alcohol abuse were met if inmates responded yes to at least one of the following:

1. **Failure to fulfill major role obligations**
   Lose job; job/school problems, such as missing too much work/school, being demoted at work, dropping out of school; not taking care of children.
2. **Continued use in hazardous situations**
   Get in situations that increased chances of getting hurt, like driving, swimming, using machinery or walking in unsafe areas.
3. **Drug/alcohol-related legal problems**
   Arrested or held by police due to drinking or drug use.
4. **Recurrent social/interpersonal problems**
   Arguments/problems with spouse, intimate, family or friends or get into physical fights.

Substance dependence symptoms: The criteria for drug and alcohol dependence were met if inmates responded yes to three or more of the following symptoms:

1. **Tolerance**
   Usual drinks/drugs had less effect; or drank more or used more drugs to get the wanted effect.
2. **Withdrawal**
   Bad aftereffects from cutting down or stopping alcohol/drugs, such as shaking, feeling nervous, anxious, sick to stomach; or taking a drink/drugs to get over any bad aftereffects.
3. **Compulsive use**
   More alcohol/drug use or using for longer periods than intended.
4. **Impaired control**
   More than once wanted to cut down/tried to cut down but couldn't.
5. **Time spent obtaining, using, recovering**
   Spent a lot of time using alcohol/drugs or getting over the bad aftereffects.
6. **Neglect of activities**
   Gave up on activities of interest/importance, like work, school, hobbies, or associating with family and friends.
7. **Continued used despite problems**
   Continued to drink/use drugs even though it was causing emotional or psychological problems.

References

Allison, P. D. (1999). Comparing logit and probit coefficients across groups. *Sociological Methods & Research, 28*, 186-208.

Allison, P. D. (2012). *Logistic regression using SAS: Theory and application* (2nd ed.). Cary, NC: SAS Institute.

Model penal code: Official draft and explanatory notes, (1985).

Anderson, E. (1999). *Code of the street: Decency. violence, and the moral life of the inner city*. New York: NY: Norton.

Anno, B. J., Graham, C., Lawrence, J. E., Shansky, R., Bisbee, J., & Blackmore, J. (2004). *Correctional health care: Addressing the needs of elderly, chronically ill, and terminally ill inmates*. Middletown, CT: Criminal Justice Institute.

Anson, R. H., & Hancock, B. W. (1992). Crowding, proximity, inmate violence, and the eight amendment. *Journal of Offender Rehabilitation, 17*, 123-132.

Auerhahn, K. (2014). Sentencing policy and the shaping of prison demographics. In J. J. Kerbs & J. M. Jolley (Eds.), *Senior citizens behind bars*. Boulder, CO: Lynne Rienner Publishers.

Austin, J., Fabelo, T., Gunter, A., & McGinnis, K. (2006). *Sexual violence in the Texas prison system* (NCJ 215774). Washington, D.C.: U.S. Department of Justice.

Averdijk, M., Van Gelder, J. L., Eisner, M., & Ribeaud, D. (2016). Violence begets violence...but how? A decison-making perspective on the victim-offender overlap. *Criminology, 54*, 282-306

Bales, W. D., & Miller, C. H. (2012). The impact of determinate sentencing on prisoner misconduct. *Journal of Criminal Justice, 40*, 394-403.

Beck, A. J., Berzofsky, M., Caspar, R., & Krebs, C. (2014). *Sexual victimization in prisons and jails reported by inmates, 2011-2012*. (NCJ 241399). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Beck, A. J., & Gilliard, D. K. (1995). *Prisoners in 1994*. (NCJ 151654). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Berecochea, J. E., & Gibbs, J. B. (1991). Inmate classification: A correctional program that works? *Evaluation Review, 15*, 333-363.

Berg, M. T., & Loeber, R. (2011). Examining the neighborhodd context of the violent offending-victimization relationship: A prospective investigation. *Journal of Quantitative Criminology, 27*, 427-451.

Berg, M. T., Stewart, E. A., Schreck, C. J., & Simons, R. L. (2012). The victim-offender overlap in context: Examining the role of neighborhood street culture. *Criminology, 50*, 359-390.

Berk, R. A., & de Leeuw, J. (1999). An evaluation of California's inmate classification system using a generalized regression discontinuity design. *Journal of the American Statistical Association, 94*, 1045-1052.

Blakely v. Washington, 542 U.S. 296 (2004).

Blitz, C. L., Wolff, N., & Shi, J. (2008). Physical victimization in prison: The role of mental illness. *International Journal of Law and Psychiatry, 31*, 385-393.

Blowers, A. N., & Blevins, K. R. (2015). An examination of prison misconduct among older inmates. *Journal of Criminal Justice, 38*, 96-112.

Blumstein, A., & Beck, A. J. (1999). Population growth in U.S. prisons, 1980-1996. *Crime and Justice: A Review of Research, 26*, 17-62.

Bonczar, T. P. (2003). *Prevalence of imprisonment in the U.S. population, 1974-2001*. (NCJ 197976). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Bonta, J., & Gendreau, P. (1990). Reexamining the cruel and unusual punishment of prison life. *Law and Human Behavior, 14*, 347-372.

Brown, J. M., Gilliard, D. K., Snell, T. L., Stephan, J. J., & Wilson, D. J. (1996). *Correctional populations in the United States, 1994*. (NCJ 160091). Washington, D.C.: U.S. Department of Justice, Bureau of Jusitce Statistics.

Bureau of Justice Assistance. (1998). *1996 National survey of state sentencing structures*. (NCJ 169270). Washington, D.C.: U.S. Department of Justice.

Cahalan, M. W., & Parsons, L. A. (1986). *Historical corrections statistics in the United States, 1850-1984*. (NCJ 102529). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Callahan, L. (2004). Correctional officer attitudes towards inmates with mental disorders *International Journal of Forensic Mental Health, 3*, 37-54.

Camp, S. D., Gaes, G. G., Langan, N. P., & Saylor, W. G. (2003). The influence of prisons on inmate misconduct: A multilevel investigation. *Justice Quarterly, 20*, 501-533.

Cao, L., Zhao, J., & Van Dine, S. (1997). Prison disciplinary tickets: A test of the deprivation and importation models. *Journal of Criminal Justice, 25*, 103-113.

Caplan, J. M. (2007). What factors affect parole: A review of empiricial research. *Federal Probation, 71*, 16-19.

Carson, E. A. (2014). *Prisoners in 2013*. (NCJ 247282). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Carson, E. A., & Anderson, E. (2016). *Prisoners in 2015*. (NCJ 250229). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Carson, E. A., & Golinelli, D. (2013). *Prisoners in 2012: Trends in admissions and releases, 1991 - 2012*. (NCJ 243920). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Carson, E. A., & Sabol, W. J. (2016). *Aging of the state prison population, 1993-2013*. (NCJ 248766). Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Celinska, K., & Sung, H. E. (2014). Gender differences in the determinants of prison rule violations. *The Prison Journal, 94*, 220-241.

Chiu, T. (2010). *It's about time: Aging prisoners, increasing costs, and geriatic release*. Retrieved from New York, NY:

Clear, T. R., & Frost, N. A. (2013). *The punishment imperative: The rise and failure of mass incarceration in America*. New York, NY: NYU Press.

Clements, C. B. (1982). The relationship offender classification to the problems of prison overcrowding *Crime & Delinquency, 28*, 72-81.

Clemmer, D. (1940). *The prison community*. New York, NY: Holt, Rinehart, & Winston.

Clogg, C. C., Petkova, E., & Haritou, A. (1995). Statistical methods for comparing regression coefficients between models. *The American Journal of Sociology, 100*, 1261-1293.

Cochran, J. C. (2012). The ties that bind or the ties that break: Examining the relationship between visitation and prisoner misconduct. *Journal of Criminal Justice, 40*, 433-440.

Cochran, J. C., & Mears, D. P. (2017). The path of least desistance: Inmate compliance and recidivism. *Justice Quarterly, 34*, 431-458.

Cochran, J. C., Toman, E. L., Mears, D. P., & Bales, W. D. (2017). Solitary confinement as

　　punishment: Examining in-prison sanctioning disparities. *Justice Quarterly*.

　　doi:10.1080/07418825.2017.1308541

Cohen, L. E., & Felson, M. (1979). Social change and crime trends: A routine activity approach.

　　American Sociological Review, 44, 588-608.

Copes, H., Higgins, G. E., Tewksbury, R., & Dabney, D. A. (2011). Participation in the prison

　　economy and likelihood of physical victimization. *Victims and Offenders, 6*, 1-18.

Cox, V. C., Paulus, P. B., & McCain, G. (1984). Prison crowding research: The relevance for

　　prison housing standards and a general approach regarding crowding phenomena.

　　American Psychologist, 39, 1148-1160.

Cumming, G. (2011). *Understanding the new statistics: Effect sizes, confidence intervals, and

　　meta-analysis*. New York, NY: Routledge.

Cunningham, M. D., & Sorensen, J. (2006a). Actuarial models for assessing prison violence risk:

　　Revisions and extentions of the Risk Assessment Scale for Prisoners (RASP).

　　Assessment, 13, 253-265.

Cunningham, M. D., & Sorensen, J. (2006b). Nothing to lose? A comparative examination of

　　prison misconduct rates among life-without-parole and other long-term high-security

　　inmates. *Criminal Justice and Behavior, 33*, 683-705.

Cunningham v. California. 270 (2007).

Daquin, J. C., Daigle, L. E., & Listwan, S. J. (2016). Vicarious victimization in prison:

　　Examining the effects of witnessing victimization while incarcerated on offender reentry.

　　Criminal Justice and Behavior, 43, 1018-1033.

DeLisi, M., Berg, M. T., & Hochstetler, A. (2004). Gang members, career criminals, and prison violence: Further specification of the importation model of inmate behavior. *Criminal Justice Studies, 17*, 369-383.

Emshoff, J. G., & Davidson, W. S. (1987). The effect of "good time" credit on inmate behavior - A quasi-experiment. *Criminal Justice and Behavior, 14*, 335-351.

Engen, R. L. (2009). Assessing determinate sentencing and presumptive sentencing: Making research relevant. *Criminology & Public Policy, 8*, 323-336.

Eyrich, K. M., Pollio, D. E., & North, C. S. (2003). An exploration of alienation and replacement theories of social support in homelessness. *Social Work Research, 27*, 222-231.

Farrington, D. P. (1986). Age and crime. *Crime and Justice, 7*, 189-250.

Fazel, S., Hope, T., O'Donnell, I., Piper, M., & Jacoby, R. (2001). Health of elder male prisoners: Worse than the general population, worse than younger inmates. *Age and Aging, 30*, 403-407.

Firebaugh, G. (1997). *Analyzing repeated surveys*. Thousand Oaks, CA: Sage Publications, Inc.

Flanagan, T. J. (1980). Time served and institutional misconduct: Patterns of involvement in disciplinary infractions among long-term and short-term inmates. *Journal of Criminal Justice, 8*, 357-367.

Forst, M. L., & Brady, J. M. (1983). The effects of determinate sentencing on inmate misconduct in prison. *The Prison Journal, 63*, 100-113.

Franklin, T. W., Franklin, C. A., & Pratt, T. (2006). Examining the empirical relationship between prison crowding and inmate misconduct: A meta-analysis of conflicting research results. *Journal of Criminal Justice, 34*, 401-412.

Frase, R. S. (1995). State sentencing guidelines: Still going strong. *Judicature, 78*, 173-179.

Friedmann, P. D., Melnick, G., Jiang, L., & Hamiliton, Z. (2008). Violent and disruptive

behavior among drug-involved prisoners: Relationship with psychiatric symptoms.

Behavioral Sciences & the Law, 26, 389-401.

Gaes, G. G., & McGuire, W. J. (1985). Prison violence: The contribution of crowding versus

other determinants of prison assault rates. *Journal of Research in Crime and*

Delinquency, 22, 41-65.

Gendreau, P., Goggin, C. E., & Law, M. A. (1997). Predicting prison misconducts. *Criminal*

Justice and Behavior, 24, 414-431.

Goodstein, L., Mackenzie, D. L., & Shotland, R. L. (1984). Personal control and inmate

adjustment to prison. *Criminology, 22*, 343-369.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford

University Press.

Haney, C. (2003). Mental health issuess in long-term solitary and "supermax" confinement.

Crime & Delinquency, 49, 124-136.

Harer, D. M., & Steffensmeier, D. J. (1996). Race and prison violence. *Criminology, 34*, 323-

355.

Harmon, M. G. (2013a). 'Fixed' sentencing: The effect of imprisonment rates over time. *Journal*

of Quantitative Criminology, 29, 369-397.

Harmon, M. G. (2013b). 'Fixed' Sentencing: The Effect on Imprisonment Rates Over Time.

Journal of Quantitative Criminology, 29(3), 369. doi:10.1007/s10940-012-9182-x

Hart, C. (1995). Gender differences in social support among inmates. *Women and Criminal*

Justice, 6, 67-88.

Hensley, C., Koscheski, M., & Tewksbury, R. (2005). Examining the characteristics of male sexual assault targets in a southern maximum-secuity prison. *Journal of interpersonal violence, 20*(667-679).

Hensley, C., Tewksbury, R., & Castle, T. (2003). Characteristics of prison sexual assault targes in male Oklahoma correctional facilities. *Journal of interpersonal violence, 18*, 595-606.

Hewitt, J. D., Poole, E. D., & Regoli, R. M. (1984). Self-reported and observed rule-breaking in prison: A look at disciplinary response. *Justice Quarterly, 1*, 437-447.

Hilbe, J. M. (2011). *Negative binomial regression* (2nd ed.). New York, NY: Cambridge University Press.

Hilinski-Rosick, C. M., & Freiburger, T. L. (2016). Examining the correlates of prison misconduct among elderly inmates. *Corrections, 1*, 215-228.

Hindelang, M. J., Gottfredson, M. R., & Garofalo, J. (1978). Toward a theory of personal criminal victimization *Victims of personal crime: An empirical foundation for a theory of personal victimization*. Cambridge, MA: Ballinger Publising Company.

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). New York, NY: Wiley-Interscience Publication.

Houser, K., & Belenko, S. (2015). Disciplinary responses to misconduct among female prison inmates with mental illness, substance use disorders, and co-occurring disorders. *Psychiatric Rehabilitation Journal, 38*, 24-34.

Houser, K., Belenko, S., & Brennan, P. K. (2012). The effects of mental health and substance abuse disorders on institutional misconduct among female inmates. *Justice Quarterly, 29*, 799-828.

Howard, C., Winfree, L. T., Mays, G. L., Stohr, M. K., & Clason, D. L. (1994). Processing
   inmate disciplinary infractions in a federal correctional institution: Legal and extralegal
   correlates of prison-based legal decisions. *The Prison Journal, 73*, 5-31.

Hox, J. J. (2010). *Multilevel analysis: Techniques and applications* (2 ed.). New York, NY:
   Routledge.

Huebner, B. M. (2003). Administrative determinants of inmate violence: A multilevel analysis.
   Journal of Criminal Justice, 31, 107-117.

Hughes, T. A., Wilson, D. J., & Beck, A. J. (2001). *Trends in state parole, 1990-2000*. (NCJ
   184735). Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics.

Human Rights Watch. (2012). *Older behind bars: The aging prison population in the United
   States*. Retrieved from
   http://www.hrw.org/sites/default/files/reports/usprisons0112webwcover_0_0.pdf

Hurley, M. H. (2014). *Aging in prison: An integration of research and practice*. Durham, NC:
   Carolina Academic Press.

Irwin, J., & Cressey, D. (1962). Thieves, convicts and the inmate culture. *Social Problems, 10*,
   142-155.

Jacobs, B. A., & Wright, R. (2006). *Street Justice: Retailation in the criminal underworld*. New
   York, NY: Cambridge University Press.

Jacobs, J. B. (1979). Race relations and the prisoner subculture. *Crime and Justice, 1*, 1-27.

Jennings, W. G., Piquero, A. R., & Reingle, J. M. (2012). On the overlap between victimization
   and offending: A review of the literature. *Aggression and Violent Behavior, 17*, 16-26.
   doi:http://dx.doi.org/10.1016/j.avb.2011.09.003

Jensen, G. F., & Brownfield, D. (1986). Gender, lifestyles, and victimization: Beyond routine activity. *Violence and Victims, 1*, 85-99.

Jiang, S., & Fisher-Giorlando, M. (2002). Inmate misconduct: A test of the deprivation, importation, and situational models. *The Prison Journal, 82*, 335-358.

Jiang, S., & Winfree, L. T. (2006). Social support, gender, and inmate adjustment to prison life: Insights from a national sample. *The Prison Journal, 86*, 32-55.

Johnson, M. C., & Menard, S. (2012). A longitudinal study of delinquency abstention: Life-course abstainers and offenders from adolescence into adulthood. *Youth Violence and Juvenile Justice, 10*, 278-291.

Kerbs, J. J., & Jolley, J. M. (2007). Inmate-on-inmate victimization among older male prisoners. *Crime & Delinquency, 53*, 187-218.

Kerbs, J. J., & Jolley, J. M. (2009). A commentary on age segregation for older prisoners: Philosophical and pragmatic considerations for correctional systems. *Criminal Justice Review, 34*, 119-139.

Klevens, J., Duque, L. F., & Ramirez, C. (2002). The victim-perpetrator overlap and routine activities: Results from a cross-sectional study in Bogota, Columbia. *Journal of interpersonal violence, 17*, 206-216.

Krienert, J. L., & Fleisher, M. S. (2005). "It ain't happening here": Working to understand prison rape. *The Criminologist, 30*, 3-6.

Kropp, P. R., Cox, D. N., Roesch, R., & Eaves, D. (1989). The perceptions of correctional officers toward mentally disordered offenders. *International Journal of Law and Psychiatry, 12*, 181-188.

Kruttschnitt, C., & Gartner, R. (2005). *Making time in the golden state: Women's imprisonment in California*. New York, NY: Cambridge University Press.

Lahm, K. F. (2009a). Educational participation and inmate misconduct. *Journal of Offender Rehabilitation, 48*, 37-52.

Lahm, K. F. (2009b). Inmate assaults on prison staff: A multilevel examination of an overlooked form of prison violence. *The Prison Journal, 89*, 131-150.

Lahm, K. F. (2009c). Physical and property victimization behind bars: A multilevel examination. *International Journal of Offender Therapy and Comparative Criminology, 53*, 348-365.

Langan, P. A. (1991). America's soaring prison population. *Science, 251*, 1568-1573.

Langan, P. A., Fundis, J. V., Greenfeld, L. A., & Schneider, V. W. (1988). *Historical statistics on prisoners in state and federal institutions, yearend 1925-86*. (NCJ 111098). Washington, D.C.

Lauritsen, J. L. (1998). The age-crime debate: Assessing the limits of longitudinal self-report data. *Social Forces, 77*, 127-154.

Lauritsen, J. L., Sampson, R. J., & Laub, J. H. (1991). The link between offending and victimization among adolescents. *Criminology, 29*, 265-292.

Lavoie, J. A., Connolly, D. A., & Roesch, R. (2006). Correctional officers' perceptions of inmates with mental illness. *International Journal of Forensic Mental Health, 5*, 151-166.

Light, S. C. (1990). Measurement error in official statistics: Prison rule infraction data. *Federal Probation, 54*, 63-68.

Listwan, S. J., Colvin, M., Hanley, D., & Flannery, D. (2010). Victimization, social support, and psychological well-being: A study of recently released prisoners *Criminal Justice and Behavior, 37*, 1140-1159.

Long, J. S., & Freese, J. (2014). *Regression models for categorical dependent variables using Stata* (3rd ed.). College Station, TX: Stata Press.

Loo, D. D., & Grimes, R. M. (2004). Polls, politics, and crime: The "law and order" issue of the 1960s. *Western Criminology Review, 5*, 50-67.

Maas, C. J. M., & Hox, J. J. (2005). Sufficient sample size for multilevel modeling. *Methodology, 1*, 86-92.

Maitland, A. S., & Sluder, R. D. (1998). Victimization and youthful prison inmates: An empirical analysis. *The Prison Journal, 78*, 55-73.

Marciniak, L. M. (2016). *Sentencing and modern reform: The process of punishment*. Durham, NC: Carolina Academic Press.

Martin, J. L., Lichtenstein, B., Jenkot, R. B., & Forde, D. R. (2012). "They can take us over any time they want": Correctional officer's response to prison crowding. *The Prison Journal, 9*2*, 88-105.

Martinson, R. (1974). What works? Questions and answers about prison reform. *The Public Interest, 35*, 22-54.

Maruschak, L. M. (2008). *Medical problems of prisoners*. Washington, D. C.: U.S Department of Justice, Bureau of Justice Statistics.

Maruschak, L. M., Berzofsky, M., & Unangst, J. (2015). *Medical problems of state and federal prisoners and jail inmates, 2011-12* (NCJ 248491). Retrieved from Washington, D.C.:

Marvell, T. B. (1995). Sentencing guidelines and prison population growth. *The Journal of Criminal Law and Criminology, 85*, 696-709.

Marvell, T. B., & Moody, C. E. (1996). Determinate sentencing and abolishing parole: The long-term impacts on prisons and crime. *Criminology, 34*, 107-128.

Mason, K. O., Mason, W. M., Winsborough, H. H., & Poole, W. K. (1973). Some methodological issues in cohort analysis of archival data. *American Sociological Review, 38*, 242-285.

Mauer, M. (2001). The causes and consequences of prison growth in the United States. *Punishment & Society, 3*, 9-20.

Mauer, M., Potler, C., & Wolf, R. (1999). *Gender and justice: Women, drugs, and sentencing policy*. Washington, D. C.: Sentencing Project.

McCorkle, R. C. (1992). Personal precautions to violence in prison. *Criminal Justice and Behavior, 19*, 160-173.

McCorkle, R. C. (1995). Gender, psychopathology, and institutional behavior: A comparison of male and female mentally ill prison inmates. *Journal of Criminal Justice, 23*, 53-61.

McCorkle, R. C., Miethe, T. D., & Kriss, A. D. (1995). The roots of prison violence: A test of the deprivation, management, and "Not-so-total" institution models. *Crime & Delinquency, 41*, 317-331.

McGuire, M. D. (2005). The impact of prison rape on public health. *California Journal of Health Promotion, 3*, 72-83.

Meade, B., & Steiner, B. (2013). The effects of exposure to violence on inmate maladjustment. *Criminal Justice and Behavior, 40*, 1228-1249.

Mears, D. P., & Cochran, J. C. (2015). *Prisoner reentry in the era of mass incarceration*. Thousand Oaks, CA: Sage Publications Inc.

Mears, D. P., Stewart, E. A., Siennick, S. E., & Simons, R. L. (2013). The code of the street and inmate violence; Investigating the salience of imported belief systems. *Criminology, 51*, 695-728.

Mendelsohn, B. (1947). *New biopsychosocial horizons: Victimology*. Paper presented at the Psychiatric Society of Bucharest, Coltzea State Hospital, Hungry.

Miethe, T. D., & McDowall, D. (1993). Contextual effets in models of criminal victimization. *Social Forces, 71*, 741-760.

Morris, R. G., Longmire, D. R., Buffington-Vollum, J., & Vollum, C. (2010). Institutional misconduct and differential parole eligibility among capital inmates. *Criminal Justice and Behavior, 37*, 417-438.

Morris, R. G., & Worrall, J. L. (2010). Prison architecture and inmate misconduct: A multilevel assessment. *Crime & Delinquency, 60*, 1083-1109.

Morton, J. B. (1992). *An administrative overview of the older inmate*. Washington, D.C.: National Institution of Corrections.

Mustaine, E. E., & Tewksbury, R. (2000). Comparing the lifestyles of victims, offenders, and victim-offenders: A routine activity theory assessment of similarities and differences for criminal incident participants. *Sociological Focus, 33*, 339-362.

Nagel, I. H., & Johnson, B. L. (1994). The role of gender in a structured sentencing system: Equal treatment, policy choices, and the sentencing of female offenders under the United States sentencing guidelines. *The Journal of Criminal Law and Criminology, 85*, 181-221.

National Research Council. (2014). *The growth of incarceration in the United States: Exploring causes and consequences* (J. Travis, B. Western, & S. Redburn Eds.). Washington, D. C.: The National Academic Press.

Osgood, D. W., Wilson, J. K., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1996). Routine activities and individual deviant behavior. *American Sociological Review, 61*, 635-655.

Pare, P., & Logan, M. W. (2011). Risk of minor and serious violent victimzation in prison: The impact of inmates' mental disorders, physical disabilities, and physical size. *Society of Mental Health, 1*, 106-123.

Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology, 36*, 859-866.

Paulus, P. B., McCain, G., & Cox, V. C. (1973). A note on the use of prisons as environments for investingating crowding. *Bulletin of the Psychonomic Society, 1*, 427-428.

Pearlin, L. I. (1989). The sociological study of stress. *Journal of Health and Social Behavior, 30*, 241-256.

Perez, D. M., Gover, A. R., Tennyson, K. M., & Santos, S. D. (2010). Individual and institutional characteristics related to inmate victimization. *International Journal of Offender Therapy and Comparative Criminology, 54*, 378-394.

Pfaff, J. F. (2015). The war on drugs and prison growth: Limited importance, limited legislative options. *The Harvard Journal on Legislation, 52*, 173-220.

Pollock, J. M. (2002). *Women, crime, and prison*. Belmont, CA: Wasworth.

Poole, E. D., & Regoli, R. M. (1980). Race, institutional rule breaking, and disciplinary response: A study of discretionary decision making in prison. *Law & Society Review, 14*, 931-946.

Pratt, T., & Cullen, F. T. (2000). The empirical status of Gottfredson and Hirschi's general theory of crime: A meta-analysis. *Criminology, 38*, 931-964.

Pratt, T., Turanovic, J., Fox, K. A., & Wright, K. A. (2014). Self-control and victimization: A meta-analysis. *Criminology, 52*, 87-116.

Prince-Embury, S. (2011). Assessing personal resiliency in the context of school settings: Using the resiliency scales for children and adolescents. *Psychology in the Schools, 48*, 672-685.

Pulkkinen, L., Lyyra, A. L., & Kokko, K. (2009). Life success of males on nonoffender, adolescence-limited, persistent, and adult-onset antisocial pathways: Follow-up from age 8 to 42. *Aggressive Behavior, 35*, 117-135.

Pyrooz, D. C., Moule Jr., R. K., & Decker, S. H. (2014). The contribution of gang membership to the victim-offender overlap. *Journal of Research in Crime and Delinquency, 51*, 315-348.

Raudenbush, S. W., & Bryk, A. S. (2002a). *Hierarchial linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage Publication.

Raudenbush, S. W., & Bryk, A. S. (2002b). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Ruback, R. B., & Carr, T. S. (1993). Prison crowding over time: The relationship of density and changes in density to infraction rates. *Criminal Justice and Behavior, 20*, 130-148.

Ryder, N. B. (1965). The cohort as a concept in the study of social change. *American Sociological Review, 30*, 843-861.

Sabol, W. J., & McGready, J. (1999). *Time served in prison by federal offenders, 1986-97*. (NCJ 171682). Washinton, DC: U.S. Department of Justice, Bureau of Justice Statistics.

Sabol, W. J., Rosich, K., Mallik-Kane, K., Kirk, D. P., & Dubin, G. (2002). *The influences of truth-in-sentencing reforms on changes in states' sentencing practices and prison populations*. Retrieved from Washington, D.C.:

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

Sampson, R. J., & Lauritsen, J. L. (1990). Deviant lifestyles, proximity to crime, and the offender-victim link in personal violence. *Journal of Research in Crime and Delinquency, 27*, 110-139.

Schnittker, J., & Bacak, V. (2015). Orange is still pink: Mental illness, gender roles, and physical victimization in prisons. *Society of Mental Health*. doi:10.1177/2156869315609733

Schreck, C. J., Ousey, G. C., Fisher, B. S., & Wilcox, P. (2012). Examining what makes violent crime victims unique: Extending statistical methods for studying specialization to the analysis of crime victims. *Journal of Quantitative Criminology, 28*, 651-671. doi:10.1007/s10940-012-9165-y

Schreck, C. J., Stewart, E. A., & Osgood, D. W. (2008). A reapprasial of the overlap of violent offenders and victims. *Criminology, 46*, 871-906. doi:10.1111/j.1745-9125.2008.00127.x

Shepard, J. M. (2002). Police, prosecutors, criminals, and determinate sentencing: The truth about truth-in-sentencing laws. *The Journal of Law and Economics, 45*, 509-533.

Short, J. F., & Strodtbeck, F. L. (1965). *Group process and gang delinquency*. Chicago, IL: University of Chicago Press.

Singer, S. I. (1981). Homogeneous victim-offender populations: A review and some research implications. *The Journal of Criminal Law and Criminology, 72*, 779-788.

Singer, S. I. (1986). Victims of serious violence and their criminal behavior: Subcultural theory and beyond. *Victims and Violence, 1*, 61-70.

Snijders, T. A. B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.). Thousand Oaks, CA: SAGE Publications Inc.

Sorensen, J., & Cunningham, M. D. (2010). Conviction offense and prison violence: A comparative study of murderers and other offenders. *Crime & Delinquency, 56*, 103-125.

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

Steffensmeier, D. J., Kramer, J. H., & Streifel, C. (1993). Gender and imprisonment decisions. *Criminology, 31*, 411-446.

Steffensmeier, D. J., Ulmer, J. T., & Kramer, J. H. (1998). The interaction of race, gender, and age in criminal sentencing: The punishment cost of being young, black, and males. *Criminology, 36*, 411-444.

Steiner, B., Butler, H. D., & Ellison, J. M. (2014). Causes and correlates of prison inmate misconduct: A systemative review of the evidence. *Journal of Criminal Justice, 42*, 462-470.

Steiner, B., & Wooldredge, J. (2009a). Implications of different outcome measures for an understanding of inmate misconduct. *Crime & Delinquency, 59*, 1234-1262.

Steiner, B., & Wooldredge, J. (2009b). Individual and environmental effects on assaults and

    nonviolent rule breaking by women in prison. *Journal of Research in Crime and*

    Delinquency, 46, 437-467.

Steiner, B., & Wooldredge, J. (2014). Sex differences in the predictors of prison misconduct.

    Criminal Justice and Behavior, 41, 433-452.

Stemen, D., & Rengifo, A. F. (2012). Charting the evolution of structure and determinacy in state

    sentencing and correction policies 1970-2010. *Justice Research and Policy, 14*, 1-46.

    doi:10.3818/JRP.14.2.2012.1

Stolzenberg, L., & D'Alessio, S. J. (1997). "Three strikes and you're out": The impact of

    California's new mandatory sentencing law on serious crime rates. *Crime & Delinquency,*

    43, 457-469.

Struckman-Johnson, C., & Struckman-Johnson, D. (2002). Sexual coercion reported by women

    in three Midwest prisons. *Journal of Sex Research, 39*, 217-227.

Struckman-Johnson, C., & Struckman-Johnson, D. (2006). A comparison of sexual coercion

    experiences reported by men and women in prison. *Journal of interpersonal violence, 21*,

    1591-1615.

Struckman-Johnson, C., Struckman-Johnson, D., Rucker, L., Bumby, K., & Donaldson, S.

    (1996). Sexual coercion reportd by men and women in prison. *Journal of Sex Research,*

    33, 67-76.

Sykes, G. (1958). *The society of captives*. Princeton, NJ: Princeton University Press.

Teasdale, B., Daigle, L. E., Hawk, S. R., & Daquin, J. C. (2016). Violent victimization in the

    prison context: An examination of the gendered contexts of prison. *International Journal*

    of Offender Therapy and Comparative Criminology, 60, 995-1015.

TenEyck, M., & Barnes, J. C. (2017). Exploring the social and individual differences among

    victims, offenders, victim-offenders, and total abstainers. *Victims & Offenders*.

    doi:10.1080/15564886.2016.1268985

Tewksbury, R. (1989). Fear of sexual assults in prison inmates. *The Prison Journal, 69*, 62-71.

Thoits, P. A. (2010). Stress and health: Major findings and policy implications. *Journal of*

    Health and Social Behavior, 51, 541-553.

Toch, H., & Adams, K. (2002). *Acting out: Maladaptive behavior in confinement*. Washington,

    D.C.: American Psychological Association.

Toman, E. L., Cochran, J. C., Cochran, J. K., & Bales, W. D. (2015). The implications of

    sentencing length for inmate adjustment to prison life. *Journal of Criminal Justice, 43*,

    510-521.

Tonry, M. (2000). Reconsidering interminate and structured sentencing. *Alternatives to*

    Incarceration, 6, 17-21.

Turner, S., Greenwood, P. W., Chen, E., & Fain, T. (1999). The impact of truth-in-sentencing

    and three strikes legislation: Prison populations, state budgets, and crime rates. *Stanford*

    Law & Policy Review, 11, 75-92.

U. S. Department of Justice, B. o. J. S. (1979). *Survey of Inmates in State Correctional Facilities*.

    Retrieved from: http://doi.org/10.3886/ICPSR04572.v2

U. S. Department of Justice, B. o. J. S. (1986). *Survey of Inmates in State Correctional Facilities*.

    Retrieved from: http://doi.org/10.3886/ICPSR04572.v2

U. S. Department of Justice, B. o. J. S. (1991). *Survey of Inmates in State and Federal*

    Correctional Facilities. Retrieved from: http://doi.org/10.3886/ICPSR04572.v2

U. S. Department of Justice, B. o. J. S. (1997). *Survey of Inmates in State and Federal Correctional Facilities*. Retrieved from: http://doi.org/10.3886/ICPSR04572.v2

U. S. Department of Justice, B. o. J. S. (2004). *Survey of Inmates in State and Federal Correctional Facilities*. Retrieved from: http://doi.org/10.3886/ICPSR04572.v2

UCLA. (n.d.). Negative binomial regression: STATA annotated output. Retrieved from http://stats.idre.ucla.edu/stata/output/negative-binomial-regression/

Useem, B., & Reisig, M. D. (1999). Collective action in prisons: Protests, disturbances, and riots. *Criminology, 37*, 735-760.

van Gelder, J. L., Averdijk, M., Eisner, M., & Ribaud, D. (2015). Unpacking the victim-offender overlap: On role differentiation and socio-psychological characteristics. *Journal of Quantitative Criminology, 31*, 653-675.

Van Voorhis, P., Wright, E. M., Salisbury, E. J., & Bauman, A. (2010). Women's risk factors and their contributions to existing risk/needs assessment: The current status of a gender-responsive supplement. *Criminal Justice and Behavior, 37*, 261-288.

von Hentig, H. (1948). *The criminal and his victim: Studies in the sociobiology of crime*. Cambridge, MA: Yale University Press.

Wagner, P., & Walsh, A. (2016). States of incarceraton: The global context, 2016. Retrieved from https://www.prisonpolicy.org/global/2016.html

Wolff, N., & Shi, J. (2009). Contextualization of physical and sexual assault in male prisons: Incidents and their aftermath. *Journal of Correctional Health Care, 5*, 58-77.

Wolff, N., Shi, J., & Siegel, J. (2009). Patterns of victimization among male and female inmates: Evidence of an enduring legacy. *Violence and Victims, 24*, 469-484.

Wolfgang, M. E. (1957). Victim percipitated criminal homicide. *The Journal of Criminal Law, Criminology, and Police Science, 48*, 1-11.

Wolfgang, M. E., & Ferracuti, F. (1967). *The subculture of violence*. London, England: Tavistock.

Wool, J. (2004). Aggravated sentencing: Blakely v. Washington legal consideration for state sentencing systems. *Federal Sentencing Reporter, 17*, 134-145.

Wooldredge, J. (1994). Inmate crime and victimization in a southwestern correctional facility. *Journal of Criminal Justice, 22*, 367-381.

Wooldredge, J. (1998). Inmate lifestyles and opportunities for victimization. *Journal of Research in Crime and Delinquency, 35*, 480-502.

Wooldredge, J., Griffin, T., & Pratt, T. (2001). Considering hierarchial models for research on inmate behavior: Predicting misconduct with multilevel data. *Justice Quarterly, 18*, 203-231.

Wooldredge, J., & Steiner, B. (2009). Comparing models for examining relationships between prison crowding and inmate violence. *Justice Quarterly, 26*, 795-826.

Wooldredge, J., & Steiner, B. (2012). Race group differences in prsion victimization experiences. *Journal of Criminal Justice, 40*, 358-369.

Wooldredge, J., & Steiner, B. (2013). Violent victimization among state prison inmates. *Violence and Victims, 28*, 531-551.

Worrall, J. L., & Morris, R. G. (2011). Inmate custody levels and prison rule violations. *The Prison Journal, 91*, 131-157.

Wright, E. M., Salisbury, E. J., & Van Voorhis, P. (2007). Predicting the prison misconducts of

women offenders: The importance of gender-responsive needs. *Journal of Contemporary*

Criminal Justice, 23, 310-340.

Wright, E. M., Van Voorhis, P., Salisbury, E. J., & Bauman, A. (2012). Gender-responsive

lessons learned and policy implications for women in prison: A review. *Criminal Justice*

and Behavior, 39, 1612-1632.

Yang, Y., & Land, K. C. (2013). *Age-period-cohort analysis: New models, methods, and*

empirical applications. BocaRaton, FL: CRC Press.

Zhang, Y., Maxwell, C. D., & Vaughn, M. S. (2009). The impact of state sentencing policies on

the U.S. prison population. *Journal of Criminal Justice, 37*, 190-199.

VITA

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