Sanctioning and Punishment in Prisons: An Examination of the Institutional Disciplinary Response to Formal Inmate Misconduct

by

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ABSTRACT

Inmate misconduct, and the formal disciplinary proceeding that follow official misconduct, is a common occurrence within correctional institutions. Decisions regarding punishment sanction post-disciplinary proceeding are important because they have direct implications for inmate freedom of movement within the institutional setting, yet this decision point has rarely been the subject of empirical research. Research that does look at this decision point commonly focuses on the presence or absence of a single category of disciplinary punishment – that being solitary confinement or disciplinary segregation. As such, prior research fails to observe the full range of post-disciplinary punishment options.

Addressing this gap in the literature, this study provides the first rigorous empirical examination of the inmate-level characteristics that influence punishment outcome following guilty institutional misconduct proceedings. Guided by criminal sentencing literature, the inmate- level characteristics are divided into groups of legal factors, quasi-legal factors, and extra-legal factors. Representing a significant advancement beyond prior research, this study operationalizes punishment outcome in two ways – as an interval-level ordered sanction severity scale and as individual punishment categories. A series of multivariate models with sample selection corrections are estimated to model the direct and interactive effects of the legal, quasi-legal, and extra-legal inmate characteristics on punishment outcome.

Results of the fully-saturated direct effects models reveal a consistent pattern across both operationalizations of the punishment outcome. The legal factor of misconduct offense and the prosocial behavior quasi-legal factors of working a prison job

and program involvement are significantly related to punishment outcomes. The quasi-legal factor representing criminogenic risk and the extra-legal factors of inmate gender and race/ethnicity are not significantly related to punishment outcomes. When the direct effects models re-estimated on samples split by inmate gender and race/ethnicity, however, the extra-legal factors of gender and race/ethnicity condition the effects of some of the legal and quasi-legal factors on punishment outcome. Results of this study suggest that, holding constant the effect of legal misconduct-related factors, disparities exist in post-disciplinary sanctioning based on inmate race/ethnicity and gender.

DEDICATION

I didn't anticipate at the start of my Doctoral studies that this is the direction my dissertation dedication would take, but things change.

This dissertation is dedicated to two important people in my professional and personal life who are no longer with us.

Professionally, I dedicate this work to Dr. Marie Griffin. You will always be one of my mentors, committee members, and Criminology role models. Thank you for all the lessons.

Personally, I dedicate this work to my Dad, Dr. Kenneth A. Ginsburg. We will always have the very important "S's" in common – Science, Sushi, and Scotch. While I have chosen a very different field, you were my first example of a true scientist. I hope to make a fraction of the impact you did. I love you.

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CHAPTER 1

LITERATURE REVIEW

Statement of the Problem

There are multiple decision points within the criminal justice system in which a form of sentencing (or sanctioning) occurs.[1] For members of the general public, those who work within the criminal justice system, and those who study or otherwise observe the elements of the justice system, discussions on the topic of sanctioning, especially "sentencing", tend to immediately and understandably bring to mind a process and outcome that occurs within the criminal court system. However, the court system is not the only context within which sanction-related decisions are made (e.g., Blumberg, 1979).

Looking to a few examples within the context of community corrections, sanctioning decisions are made when someone is denied pre-trial release, is assigned to higher levels of supervision and incapacitation, and is revoked from supervision to incarceration due to criminal acts or technical violation (Morris & Tonry, 1990). Further sanctioning decisions are made when probationers violate their terms of community supervision, whether it be probation or parole (Petersillia, 1985). Within institutional corrections we see similar points of sanctioning decisions. For instance, sanction-related decisions are made by correctional officials at the time of entry to prison (security of

[1] For purposes of the current research, "sentencing" refers to a discretionary decision made on the part of individual criminal justice actors (or groups of criminal justice actors) regarding a punishment or disciplinary outcome following a determination or finding of guilt for commission of some type of offense or infraction. The criminal court system involves a bifurcated process with two separate decisions – one regarding guilt or innocence, and a second regarding choice of punishment outcome. The current research focuses on the second of these two decisions that make up the larger sentencing process, and draw parallels between the influences on choice of punishment outcome (which by definition follows a finding of guilt) in various contexts within the criminal justice system.

prison) and exit to parole via early release to community supervision (Caplan, 2007; Petersillia, 2003; Travis & Lawrence, 2002). The decision to release from custodial confinement to parole represents a point in which criminal justice actors make a discretionary decision that has direct implications on freedom of movement within an indeterminate punishment structure. "Back-end sentencing" is a term commonly used within the community corrections literature to discuss punishment decisions following violations of the terms of probation or parole supervision (Blumstein & Beck, 2005; Travis, 2007). Both the parole release and revocation decision points have been subject to a fair amount of empirical scrutiny to inform our understanding of the factors that influence these decisions. Similar sanctioning decisions are also made within the realm of institutional corrections, prior to release, when considering the formal disciplinary process designed to respond to inmate misconduct (Flanagan, 1982). This is the decision point under study in the current research.

The inmate disciplinary process is a routine occurrence within prisons, but unlike the visible process and outcomes of sentencing practices in criminal courts, it is largely shielded from observation by the closed nature of correctional institutions. Given that the inmate disciplinary review process is essentially unobservable to those outside of the institutional setting, the extent of disparate sanctioning decisions is unknown. Prior research on discretionary decision making at various stages of the criminal justice process suggests that differential processing may occur based on a variety of factors (Gottfredson & Gottfredson, 1988), some of which can be considered to be legally-relevant factors while others are in fact extra-legal factors. Commonly, extra-legal factors are personal, socio-demographic factors (such as age, race/ethnicity, and gender). A similar body of

research has also found that differential processing may be more likely to occur at those decision points within the criminal justice system that are less "visible" (Gottfredson & Gottfredson, 1988) – such as the inmate disciplinary process. The paucity of research to date on the inmate disciplinary process provides some support for a thesis of differential disciplinary punishment outcomes based on both legal and extra-legal factors (Butler & Steiner, 2016; McClellan, 1994; Olson, 2016a; Poole & Regoli, 1980); yet a thorough review of the literature suggests that the extent to which legal and extra-legal factors create differential for inmate misconduct remains largely unknown.

There are several reasons why this oversight in the research literature is problematic. First, disciplinary sanctions can affect inmates' custody levels, cell assignment, conditions of confinement, their treatment and other programming opportunities and consideration for work assignments, and, ultimately, their date of release through accumulation of "good time" and other early release programs (Butler & Steiner, 2016; Ciszak, 1996; Flanagan, 1982; Poole & Regoli, 1980; Steiner & Cain, 2017). The formal disciplinary process and consequent sanctions or punishment outcome are a form of direct social control within the institutional setting. Disparate sanctioning outcomes would indicate that formal social control within the institution is not dispensed in a consistent manner across inmates based on non-legal factors (such as disparate punishment outcomes across racial/ethnic differences among inmates; Thomas, Mika, Blakemore, & Aylward, 1991). Therefore, due to the discretionary nature of this decision point, coupled with the observation that there is little to no oversight external to the institutional setting, it is possible that disparate sanctioning outcomes based on extra-legal factors would result in a situation where some offender groups may be

systematically treated more harshly within prisons than others (Hewitt, Poole, & Regoli, 1984).

Second, it is possible, perhaps likely, that inmates' experiences with the disciplinary process and the consequent sanction decision following a guilty finding will directly impact their subsequent behavior while incarcerated. Whether or not the sanction achieves a deterrent effect, differential sanctioning and punishment outcomes across inmates could generate negative prison-related attitudes among the inmate population. For example, experiences during the disciplinary process and perceptions regarding the punishment outcome can impact perceptions of distributive and procedural justice, and of the legitimacy of the larger institutional setting. The result is a set of negative attitudes about individual correctional officers, as well as the institutional management and prison environment itself (Liebling, 2004; Sparks, Bottoms, & Hay, 1996; Useem & Kimball, 1989).

These attitudes, particularly those regarding procedural justice, have the potential to impact inmate behavior in either a negative or positive (compliant) manner while incarcerated (Beijersbergen, Dirkzwager, Eichelsheim, Van der Laam, & Nieubeerta, 2015; Jackson, Tyler, Bradford, Taylor, & Shiner, 2010; Sparks & Bottoms, 1995) and upon release (Beijersbergen, Dirkzwager, & Nieuwbeerta, 2015). Similarly, the application of Sherman's defiance theory to the inmate disciplinary process suggests that if inmates are punished in a manner they define as disrespectful due to unfair sanction outcome, they can use this as provocation to act in further defiance of institutional rules governing inmate behavior (Sherman, 1993; Bouffard & Piquero, 2010).

This study addresses this gap in the literature by examining the influence that various inmate characteristics have on the sanctioning or disciplinary punishment outcome following inmate misconduct proceedings. Incorporating key factors identified in the sanctioning process in the criminal courts to inform the research design, inmate level-characteristics will be operationalized into groups of legally-relevant (legal), quasi-legal, and extra-legal factors. By way of methodological contributions to the literature, this study will be the first to test the influences on sentencing within prisons with an outcome variable operationalized in terms of the full continuum of severity of possible punishment options. Additionally, the methodology of the proposed research will expand the current body of literature by examining these relationships with a national sample of male and female inmates housed in a large number of state and Federal prisons across the United States. This will allow for the inclusion of variables related to institutional environment at the second level of analysis as a method by which we can statistically account for the impact that institution-level factors could exert on the choice of disciplinary outcome. As will be discussed in detail in Chapter 2, this project will answer two research questions:

Research Question 1: What is the nature of the relationship between various inmate characteristics – categorized into groups of legal, quasi-legal, and extra-legal factors – and punishment outcome?

Research Question 2: Beyond the significant direct effects, do the extra-legal factors condition the effect of the legal and quasi-legal factors on punishment outcome?

Each of the above research questions has multiple hypotheses embedded within the larger question, as will be specified in Chapter 2. Before moving on to a discussion of

the research questions and hypotheses in Chapter 2 and methodology and analytic strategy in Chapter 3, the remainder of this chapter will provide an overview of the background information upon which the research design is built. This review of the literature and state of the research will cover two main areas. First, the literature review will discuss what is known regarding factors that influence sanctioning decisions in the criminal court system. This body of literature informs the current hypotheses regarding the manner within which it is expected that the inmate level factors will influence the choice of disciplinary punishment outcome. Continuing on, it will then provide a summary of the literature to date on the inmate disciplinary process, focusing on the small body of classic and more contemporary research literature that looks at influences on the punishment outcome following formal institutional misconduct proceedings. The final section of this chapter will illustrate how this research and the research hypotheses are consistent within the theoretical framework of the focal concerns perspective.

Influences on Sanctioning Decisions in the Court System

The formal inmate disciplinary process is a routine occurrence within the daily life of prison management and operations, which helps to establish and maintain a stable institutional setting (Poole & Regoli, 1980). By nature, correctional institutions are closed, total institutions (Goffman, 1961), characterized by impermeable "walls" built up around their exterior. These walls serve not only to contain the resident inmates, but also to shield the routine practices and activities within the prison from public view. As such, access to and observation of daily life within correctional institutions is highly restricted and fully controlled by institutional- and system-level administrators. Contrary to the

openness and visibility of the sentencing process in the criminal and civil court system, the inmate disciplinary process is conducted completely internal to the institution, rendering both the process and the outcome all but unobservable to the public (Petersen & Friday, 1975).

It is possible, however, to draw parallels between the sanctioning or punishment outcome following the inmate disciplinary process and the sentencing outcome following a criminal conviction (Butler & Steiner, 2016; Steiner & Cain, 2017). For instance, both of these punishment outcomes are the result of a bifurcated process, whereby first a determination of guilt or innocence is made. After guilt is determined within both contexts (institutional misconduct and criminal offense), a second process occurs that concludes with a punishment decision made by criminal justice actors. Although determinate sentencing and sentencing guidelines do, at times, curb or essentially eliminate judicial discretion in criminal sentencing (e.g., Stolzenberg & D'Allessio, 1994; Tonry, 1997), it is accurate to say that the sanction decision within both prisons and courts is highly discretionary in that, in both cases, official decision makers (institutional disciplinary personnel in prisons and judges within the criminal courts) select a punishment outcome(s) from a range of possible sanction alternatives (Butler & Steiner, 2016; Flanagan, 1982). Just as criminal sanctions following conviction for a criminal offense range in severity from fines to levels of supervision within the community, and to degrees of incarceration, disciplinary personnel within prisons also have a variety of increasingly severe sanctions to choose among in response to specific instances of inmate misconduct (e.g., Harvard Center for Criminal Justice, 1972). Due to the lack of rigorous empirical research into formal disciplinary sanctioning within prisons, coupled with the

acknowledgment of similarities between the disciplinary process/sanction outcome and sentencing within the criminal courts (Flanagan, 1982), this research relies on the established body of sentencing literature to inform the hypotheses regarding how individual (inmate) level factors impact the sanction or punishment outcome.

Individual Level Influences on Sanction Outcome within Sentencing

A review of the literature suggests that there has been a considerable amount of research conducted in an attempt to understand the degree to which characteristics of the individual, specifics of the crime event, and even elements of the court setting itself influence individual punishment decisions in the criminal courts (e.g., Albonetti, 1991; Bales & Piquero, 2012; Spohn & Holleran, 2000; Steffensmeier, Ulmer, & Kramer, 1998). Research that examines the variation in and influences on individual-level sentencing outcomes has a history dating back multiple decades, providing a rich body of empirical literature focused on the influences on judicial discretion and decision-making regarding individual sentencing/sanctioning outcomes. This body of research has included both qualitative and quantitative research designs, and has taken many different forms. For example, some research has presented judges with hypothetical cases and then asked how and what punishment decision/s they would make (e.g., Cook, 1973; Forst & Wellford, 1980; Spohn & Horney, 1991). Another approach used within this area of research has been to collect data on actual cases and use statistical techniques to determine the relative influence that specific characteristics of interest have on choice of sentencing outcome (e.g., Albonetti, 1997; Spohn, Gruhl, & Welch, 1981; Steffensmeier, Kramer, & Ulmer, 1995; Ulmer, 1997).

This extensive body of research on judicial discretion regarding punishment decisions in the sentencing process has concluded that there are multiple factors beyond offense severity affect sentencing severity (e.g., Baumer, 2013; Nagel & Weitzman, 1971; Pope, 1975; Spohn, 2009, 2015). These other factors found to influence sentence severity include offender background characteristics, case-processing factors (e.g., plea bargain versus trial-based disposition, pre-trial detention, private or public attorney), and factors related to the courtroom and/or community context (Spohn, 2009).

Case specific characteristics of the criminal offense and the offender have been found to influence choice of sentencing outcome. These characteristics commonly are grouped in terms of the extent to which they are "legally relevant" to the current sentencing decision (e.g., Feldmeyer, Warren, Siennick, & Neptune, 2015; Hagan, 1974; Johnson, 2006; Kutateladze, Andiloro, Johnson, & Spohn, 2014; Wang & Mears, 2010; Warren, Chiricos, & Bales, 2012). Legally relevant factors, or "legal factors", for the criminal sentencing decision include only those factors that judges are legally authorized to take into consideration during the sentencing process. These factors include specifics of the offense (e.g., the nature and number of current charges) and the individual's prior criminal/arrest and conviction history.

The term "extra-legal" often is used within the sentencing literature to refer to any other characteristics or attributes of the offender that are legally irrelevant to judicial sentencing decisions (Hagan, 1974; Lotz & Hewitt, 1977), such as demographic factors (namely gender, race/ethnicity, and age[2]), indicators of involvement in conventional

[2] Some could argue that age can be a legal factor relevant to the sentencing decision, especially when considering juvenile offenders waved into adult court, decisions between different sentencing options, or other similar circumstances.

prosocial activities (e.g., employment status, marital history and having minor children, residential stability), factors that could be interpreted as indicators of criminogenic risk (such as addiction history), and the like. Research in this area is mixed, but has generally found that both sets of explanatory factors -- legal and extra-legal -- affect the sentencing process (e.g., Hewitt, Poole, & Regoli, 1984).

Even within the category of extra-legal factors, however, there is a clear distinction between demographic factors (gender, race/ethnicity, age) and the others (e.g., indicators of involvement in conventional activities, attitudes and behaviors that indicate criminogenic risk and needs). Beyond being legally irrelevant to the current sentencing decision, offender demographics *are not supposed* to be considered at all during sentencing (Hagan, 1974). As such, gender, race/ethnicity, and age often are defined as "non-legal" or extra-legal factors and all other influential factors that cannot be categorized as legal factors or extra-legal factors are considered as quasi-legal factors.

Legally relevant factors that affect sanction outcome. Legally relevant factors include those that judges are legally authorized to take into consideration when making sentencing decisions (Hagan, 1974). Among these, the most salient variables are the severity or type of conviction charge, number of charges for which the sentencing decision under observation is made, and the prior criminal (i.e., arrest) and conviction-related history of the offender. Beyond the category of offense for which an individual is sentenced, indicators of offense seriousness can include weapon use, the extent of injury to the victim, and the like.

The current body of sentencing research generally concludes that the legal factors of offense severity and prior record account for a significant amount of explanatory

power when predicting sanction type (e.g., prison versus community supervision) and length of sentence (e.g., Albonetti, 1997; Spohn & DeLone, 2000; Steffensmeier et al., 1998; Ulmer, 1997). Although challenging to quantify due to methodological difficulties, Engen and Gainey (2000) suggest that roughly 50 to 60 percent of the variation in length of prison sentence is explained by the legally relevant factor of offense severity. Consistent with expectations, the large body of sentencing research finds that, holding all other factors constant, offenders who commit more serious crimes are sentenced more harshly than offenders who commit less serious crimes (e.g., Blumstein et al., 1983). Similarly, offenders with more extensive and serious criminal histories receive more severe sentences than do those similarly-situated individuals with less extensive or serious criminal histories (e.g., Blumstein, Cohen, Martin, & Tonry, 1983). The bulk of sentencing research finds that legal factors explain most of the variation in sentencing outcome (e.g., Albonetti, 1997; Dixon, 1995; Engen & Gainey, 2000; Feldmeyer & Ulmer, 2011; Feldmeyer et al., 2015; Johnson, 2006; Johnson & Dipierto, 2012; Kramer & Steffensmeier, 1993; Kutateladze et al., 2014; Miethe & Moore, 1985, 1986; Spohn & Holleran, 2000; Steffensmeier, Kramer, & Streifel, 1993; Steffensmeier et al., 1998; Ulmer, 1997; Ulmer & Johnson, 2004; Wang & Mears, 2010; Warren et al., 2012; Wooldredge, 2010). However, since the legal factors do not explain all variation in sentencing outcome, this same finding also suggests that extra-legal factors significantly influence sentencing outcome as well.

"Quasi-legal" factors that affect sanction outcome. Prior criminal record and seriousness of the current offense are not the only offender characteristics that influence sanctioning decisions (e.g., Nagel & Weitzman, 1971; Pope, 1975; Spohn, 2009).

Empirical studies have demonstrated that the type and the severity of sentence imposed may depend on individuals' demographic characteristics and other factors, such as their perceived socio-economic status (e.g., education level, income) and social stability (e.g., residential stability, employment status, marital and familial history, having minor children), as well as indicators of criminogenic risk and need (e.g., age at first arrest and history of addiction). These influential characteristics have been discussed in the theoretical literature and then operationalized empirically as "extra-legal characteristics." They are so termed "quasi"-legal as an acknowledgement that, although legally irrelevant, they do influence sentencing outcomes (Hagan, 1974).

Extra-legal factors that affect sanction outcome. Although there are studies focusing on the influence of extra-legal factors on disparate sentencing outcomes dating back to the early part of the twentieth century (e.g., Martin, 1934; Sellin, 1928), a more methodologically sophisticated multivariate inquiry in to the extra-legal influences on differential sentencing outcomes began with the empirical work of various scholars in the early 1970s (Chambliss & Seidman, 1971; Hagan, 1974; Quinney, 1970). Independent variables that were commonly tested when conducting research into the influence of non-legal, or extra-legal, characteristics on sentencing include, but are not limited to, the race/ethnicity, gender, age, and class/socio-economic status of the defendant (Hagan, 1974). Numerous recent empirical, meta-analytic, and narrative reviews of the sentencing literature conclude that these variables remain important within the more contemporary empirical research in this area (Buamer, 2013; Franklin, 2015; Mitchell, 2005; Spohn, 2009; Ulmer, 2012; Zatz, 2000).

Defendant race/ethnicity is arguably the physical characteristic most closely associated with disparate outcomes across the many discretionary decision points within the criminal justice system (Poole & Regoli, 1984). Anecdotal and documented qualitative accounts of differential treatment of Whites and Blacks (Alexander, 2012; Kennedy, 1997; Myrdal, 1944) as well as Whites versus other minority racial/ethnic groups (e.g., Mann, 1993) has a long history within the United States. Looking specifically at the empirical sentencing literature, we see that research often finds that Blacks and Hispanics are sentenced more harshly than Whites (for full reviews of this literature, see overviews by Chiricos & Crawford, 1995; Mitchell, 2005; Spohn, 2000; Zatz, 2009).

In a review of 38 published sentencing studies, Chiricos and Crawford (1995) found that there is significant evidence of a direct impact of race on the decision to incarcerate, and this effect persisted after the addition of the legally relevant control variables -- crime severity and criminal record -- in the empirical models. Consistent with the main conclusions of Chiricos and Crawford, in a review of 40 studies at both the state and Federal level, Spohn (2000) suggested that, overall, there was evidence of a direct race effect: Blacks and Hispanics were more likely to be sentenced to prison than white defendants. Similarly, after conducting a meta-analytic review of 71 published and un-published quantitative studies on race/ethnicity and sentencing outcome, with controls for legally-relevant variables, Mitchell (2005) determined that African-Americans generally are sentenced more harshly than whites.

Research on the influence of gender on severity of sentencing outcome generally finds that men are sentenced more harshly than women (e.g., Daly & Bordt, 1995; Daly

& Tonry, 1997; Steffensmeier, Kramer, & Streifel, 1993). Similarly, younger adults are sentenced more harshly than either juveniles/teenagers or older adults (Spohn & Holleran, 2000; Steffensmeier et al., 1995, 1998).

Interaction among extra-legal factors: An intersectionality approach. Starting in the late 1980s into the 1990s, sentencing scholars began to explore an intersectionality-based approach to examining the influence that specific extra-legal factors have on sentencing outcomes (Daly, 1989, 1994; Daly & Tonry, 1997). Under this perspective, it is inappropriate to consider the influence of a *single* extra-legal factor, like race/ethnicity or gender, on criminal justice outcome/s as these ascribed social characteristics always present *together* in the real world[3]. Therefore, it becomes important not to just look at the unique influence of race/ethnicity on sentencing and the unique influence of gender on sentencing, but to consider the *interactive* influence of race/ethnicity and gender together on sentence severity, net of legally relevant factors. Looking specifically at offender characteristics that interact to influence sentence outcome, age is another extra-legal factor that is commonly included in intersectional models with race/ethnicity and gender.

Research that looks at the interactive effect of age, gender, and race/ethnicity largely finds that young minority-male offenders are subject to the most severe sanctioning decision when compared to all other offender groups (Franklin, 2010; Mustard, 2001; Steffensemeier et al., 1998; Spohn, 2000). More specifically, age, race/ethnicity, and gender all interact to produce harsher sentence outcomes for young Black males than all other offender groups (Franklin, 2010; 2017; Steffensmeier et al.,

[3] Applied to institutional corrections, we know that prison impacts and is experienced by inmates differently based on various characteristics, including the interactive effects of these characteristics (Irwin & Cressey, 1962; Ocen, 2013).

1998). Building on that finding, Spohn and Holleran (2000) included Hispanic individuals in their multi-jurisdictional sample to look further at the race/ethnicity-gender-age interaction. While the findings are not as definitive as they are when comparing Black and White offenders of different gender and age groupings, this research still found a minority race/ethnicity effect that had both a direct effect on sentencing outcome and interactive effect of gender – race/ethnicity – age (Spohn & Holleran, 2000). Specifically, at one research site, Spohn and Holleran found that young Black male offenders were 12.1 percent more likely than young white male offenders to be sentenced to prison, while young Hispanics were 15.3 percent more likely than young whites to be incarcerated, controlling for legally relevant factors. A similar pattern is found when looking at gender and race/ethnicity in split-gender samples; minority women tend to be punished more severely than are similarly situated white women when controlling for legally-relevant factors (Spohn & Beichner, 2000; Steffernsmeier et al., 1993; Steffensmeier & Demuth, 2006).

Prior research on the influence of "quasi-legal" factors. Although not currently operationalized this way in sentencing literature, an argument could be made that some of what are currently termed extra-legal factors are actually *quasi-legal factors*. With regard to the potential to influence sentencing outcomes, legally relevant factors are those that are directly proscribed by legal statute and formal policy to be the factors that are to be considered during the sentencing process. Extra-legal factors, as discussed above, are all the other offender and case characteristics that have been empirically demonstrated to be statistically associated with and predictive of sentencing outcomes (Hagan, 1974). However, it is possible to make a clear distinction between the so-called

"legality" of considering some of the extra-legal factors (namely ascribed offender demographic characteristics such as race/ethnicity, gender, age) during the sentencing process and others (e.g., history of addiction, employment history, education, responsibility for young children). In contrast to ascribed offender demographic characteristics, these other characteristics and factors are achieved characteristics that are largely behaviorally-based. While it is true there is some debate regarding how to classify gender (Steffensmeier et al., 1998) the majority of legal scholars would agree that allowing offender personal socio-demographic characteristics to have a direct influence on the sentencing process violates the integrity of the sentencing process, which should be impartial and non-discriminatory.

A search of the current body of sentencing literature shows that there is very little direct mention of "quasi-legal factors" that are relevant to the sentencing process, with scholars instead conceptualizing and operationalizing relevant factors and offender characteristics in to categories of "legal" or "extra-legal" factors. There was a series of research published in the 1970s and 1980s that analyzed influences on court dispositions and sentencing outcomes and the part played by quasi-legal factors (Bernstein et al., 1977; Crew, 1991; Frazier & Bock, 1982; Frazier et al., 1980; Mann, 1984; Swigert & Farrell, 1977). However, since that time similar research has not considered any influential offender or case characteristics to be "quasi-legal" factors, instead opting to categorize only into the dichotomy of legal and extra-legal factors.

Evidence of an interaction between legal and extra-legal factors. As noted before with respect to a possible interaction among specific extra-legal factors, there also is the potential for a significant interaction between legally-relevant and extra-legal

factors. Some scholars have suggested, and in fact demonstrated, that the independent effect of legal and extra-legal factors can be challenging to parse out, as it is highly possible that some of the "legal" factors have been the outcome of biased or disparate criminal justice system processing based on extra-legal factors (Hewitt et al., 1984). In this perspective, extra-legal factors, namely race/ethnicity and gender, are assumed to have an indirect influence on sentencing decisions by way of their direct effect on outcomes at prior stages of the criminal justice process. Affirming this assumption, qualitative research on court decision-making concluded that race/ethnicity affect sentencing outcomes through criminal history and crime severity (Kramer & Ulmer, 1996). Reaching the same conclusion, Bushway and Piehl (2001, p.736) asserted "it is not hard to think of cases in which (racial) discrimination could be masked by correlation with legal factors." Reaching a similar conclusion, Spohn (2008) argues that crime seriousness and prior record are not "pure" legal factors.

There has been a trend in the sentencing literature whereby scholars have begun to question whether the common finding that legally-relevant factors account for the majority of the variation in sentencing outcomes is actually an artifact of the research methodology and/or statistical techniques used in the analyses (e.g., Franklin, 2015), and not necessarily evidence that there is no systematic, overt bias at operation among criminal justice decision makers as a whole. Scholars suggest that it is possible that offense xseverity does not have a linear effect on (or relationship with) sentencing outcomes, as is assumed by the commonly used OLS and/or logisitic regression techniques (Engen & Gainer, 2000; Tonry, 1993, 1996). In response to this suggestion, some research has begun to estimate interactive models to examine whether

race/ethnicity operates indirectly on sentencing outcome through another variable/s, such as prior criminal record, courtroom environmental factors, community context, or other individual offender characteristics. Common statistical techniques that account for the conceptual interaction between race/ethnicity and other variables include the incorporation of interaction terms into multivariate models (e.g., Chiricos & Crawford, 1995; Miethe & Moore, 1986; Myers & Talarico, 1987; Spohn, 2000; Zatz, 1987), or estimating separate models for racial/ethnic and even age- and gender-based subgroups of race/ethnicity (e.g., Albonetti, 1997; Steffensmeier et al., 1998).

Influence of Environmental and Case Processing Characteristics on Sanction

Sentencing research has also demonstrated that there are elements of the environment and external context (Myers & Talarico, 1986) and various case processing factors (Dixon, 1995; Emerson, 1983; Waegel, 1981) that influence the sanctioning outcome during the criminal court process. The initial findings of significant direct effects of courtroom and community characteristics on individual sentencing outcomes reported in the seminal study by Myers and Talarico (1986) have since been replicated with more advanced statistical techniques on both state (Britt, 2000; Dixon, 1995; Ulmer & Johnson, 2004) and federal samples (Albonetti, 1997; Kautt, 2002; Mustard, 2001). A number of studies have concluded that characteristics that vary among courts -- specifically the nature of the courtroom caseload including type/severity and number of cases -- influence individual sentencing outcomes (D'Alessio & Stolzenberg, 1997; Dixon, 1995; Kautt, 2002). With regards to community characteristics, this same body of research finds that the county-level crime rate and the racial composition of the surrounding area influence sentencing outcome (e.g., Johnson, 2006; Ulmer & Johnson,

2004). Case processing factors that have been demonstrated to influence sentencing outcome include the type of disposition, release on pretrial detention, and type of attorney (Dixon, 1995).

Another body of sentencing research suggests that the influence of individual-level offender characteristics (grouped in to categories of legal, quasi-legal, and extra-legal factors) will interact with courtroom/environmental characteristics to influence sanctioning outcome. For example, after their review of 38 empirical sentencing studies, Chiricos and Crawford (1995) concluded that the probability of incarceration and average sentence length increase for black defendants in specific environmental contexts (e.g., where there is a higher proportion of blacks in the population, and where the unemployment rate is high).

Summary

There is a significant amount of evidence that quasi-legal and, in fact, extra-legal factors exert a non-trivial effect on sanction outcomes once the effect of legally-relevant factors is held constant. Building on the findings of the significant direct effects of the legal, extra-legal, and quasi-legal factors on sanction outcome, research also has demonstrated that the extra-legal factors of gender, race/ethnicity, and age can interact with, or condition, the effects of legal and quasi-legal factors. The next section of the literature review applies this legality-based framework of classifying influential factors on sentencing outcome to the current decision point under observation, that of the sanction decision following institutional disciplinary proceedings.

Application of the "Legality-Based Influences Framework" to the Decision to Sanction in Institutional Misconduct Proceedings

The purpose of this research is to apply the legal, quasi-legal, extra-legal factor framework as operationalized in the sentencing literature to study the influence of these factors on the sanction outcome following inmate disciplinary proceedings, a decision point about which our knowledge is currently quite limited. Employing this perspective allows for the examination of the influence of the specific variables that influence this discretionary punishment outcome within a framework commonly used when examining other decision points within the justice system. Prior to presenting a review of the small body of literature that focuses specifically on the influences on punishment outcome following misconduct proceedings, the legal, quasi-legal, and extra-legal framework will be applied to the context of research on the formal disciplinary response to inmate misconduct.

Legal and Extra-legal Factors in Prison Misconduct Sanction

The legally-relevant factors considered in the court sentencing process, severity and type of offense and specifics of the individuals' prior record of conviction/s (Hagan, 1974), are also the legally-relevant factors for determination of the sanction in prison misconduct hearings. Translating these concepts to the case of institutional misconduct, the legally-relevant factor of seriousness and/or type of offense would apply to the instant (or current) misconduct offense, not the offense for which they are serving their period of incarceration (Babcock, 1981). Similarly, the other legally-relevant factor of prior record of conviction would also apply specifically to the institutional setting. In this case, though, prior record/convictions translates to prior instances of official institutional

misconduct (Babcock, 1981), not the specifics of an inmates' prior arrest/s and conviction/s outside of the prison setting.

As the review of the literature indicates, extra-legal factors[4] as operationalized in the sentencing literature are the ascribed demographic characteristics of gender, race/ethnicity, and age. Not surprisingly, the category of extra-legal factors maintains the same operationalization within the context of the official disciplinary response to inmate misconduct.

Quasi-legal Factors in Prison Misconduct Sanction

Similar to the quasi-legal factors relevant to court sentencing discussed previously, disciplinary hearings also have a variety of options for reference that reflect the nature of the court-based quasi-legal factors. As previously discussed with reference to post-conviction sentencing, quasi-legal factors include those individual-level characteristics related to socio-economic status (e.g., education level, income) and social stability (e.g., residential stability, employment status, marital and familial history, and having minor children), as well as indicators of criminogenic risk and need (e.g., age at first arrest, history of addiction). Within the context of institutional corrections, relevant and parallel factors reflect inmate involvement in conventional or prosocial activities within the prison setting, indicators of criminogenic risk, and indicators of overall institutional adjustment. Examples of this group of factors and indicators could include such characteristics as involvement in prison work/employment and/or involvement in rehabilitative, educational, vocational, recreational, or other programs within the prison.

[4] This research continues to maintain the distinction discussed previously regarding *extra-legal* factors and *quasi-legal* factors, regardless of the trend in the courts and sentencing literature to combine them in to one category of extra-legal factors.

Other salient factors include prison gang membership, criminal history prior to the current term of incarceration, and elements of the inmates' institutional case file (e.g., prior terms of incarceration, offense for which serving period of incarceration).

Prison Environmental and Case-Processing Factors

In an ideal situation, it would be possible to explore the influence of various case processing and institution-level factors on punishment outcome. Within the context of the current decision point, the relevant case processing factors would include factors such as the makeup of and ideological beliefs of the members of the disciplinary committee, the level and nature of inmate and reporting correctional officer involvement in the disciplinary process, and the punishment sanctioning guidelines within each institution and/or state or federal system. With regard to institution-level factors that address specifics of the prison environment unique to each institution and larger system, these factors can be likened to characteristics of the community and elements of the specific court (and courtroom) that influence criminal sentencing outcomes (D'Alessio & Stolzenberg, 1997; Myers & Talarico, 1986).

Institutional corrections research has confirmed that elements of the prison environment, as well as aggregated demographic characteristics of the resident inmate population, influence the type and rate of inmate misbehavior, and therefore the rate of formal institutional misconduct, that occurs within the prison (e.g., Camp & Gaes, 2005; Camp, Gaes, Langan, & Saylor, 2003; Gendreau, Goggin, & Law, 1997). Relevant factors include: security level of the facility, inmate freedom of movement and involvement in work, rehabilitation, and recreational programming, the proportion of inmates involved in prison gangs (security threat groups), the type of offenders housed

within the facility (such as majority drug offenders or a high proportion of inmates with a violent crime of instant offense), and the age and racial/ethnic breakdown of the inmate population. While not yet the subject of extensive research, initial findings within this area suggest that the same sort of prison environmental factors and aggregated inmate demographic characteristics that influence misconduct-related behavior within the prison will also influence the official response to inmate misbehavior through formal misconduct proceedings (Butler & Steiner, 2016).

Influences on Disciplinary Sanctioning within Prisons

The Beginning of the Process: Formalizing Inmate Misbehavior as Institutional Misconduct

Within the prison setting, various types of behavior can be formally sanctioned as "institutional misconduct." One type includes those behaviors that would be considered a crime or in violation of criminal law outside the prison, these include arson, assault, and manslaughter, and possession of illegal drugs, for example. A second and much broader category of misconduct is specific to the institutional environment and involves violation of rules and regulations designed to maintain custody, security, and order (Jackson, 1974; Sykes, 1958). Each prison has its own set of inmate rules and regulations, although there is a significant amount of overlap in these "house rules" across prison systems in the United States. Engaging in the behaviors that fall in this category of institution-specific misconduct does violate the rules and regulations of the facility, so it is technically considered institutional misconduct, but commission of the same behavior outside of the

prison setting would not be classified as a *crime* (Jackson, 1974; Jacob & Sharma, 1982). The need for social control in prisons is greater than it is outside the facility, so the rules differentiating acceptable from unacceptable behavior are broader within the prison setting than in general society (Jackson, 1974).

As custody, security, and order are the main goals of the institutional structure (DiIulio, 1987), it is not surprising that a majority of actions that are considered inmate misconduct are directly related to the security of the institution. An analysis of the different types of inmate misconduct that have a criminal counterpart outside of the institutional setting suggests that most of the inmate misconduct that fall into this category represents some sort of threat to the security of the institution and those who live and work within it (Jacob & Sharma, 1982; Sykes1958). Varieties of misconduct that fall into this category include, for example, fighting and various types of assault on other inmates or staff, stalking and other forms of threatening and intimidating behavior, possession and/or distribution of controlled substances, possession of a weapon, and theft of personal or institutional property.

There are some forms of misconduct specific to the institutional setting that are also related to the security of the institution, such as escape attempts, inmates "being out of place" (in an unauthorized location), tampering with locking devices, and inciting organized group resistance among the inmate body (Jacob & Sharma, 1982). While a significant portion of the behavioral control rules outlined in the inmate handbook are geared toward maintaining the security of the institution, there are also a large number of behavioral control rules, and therefore also a significant amount of categories of formal inmate misconduct, that are not in any way associated with the security of the

institutional setting. For example, there are rules and types of official misconduct related to work performance, misuse of food, unauthorized contact with the outside world (misuse of mail or telephone services), abusive language, and a lack of neatness/orderliness in personal hygiene and cell upkeep. Finally, there are some disciplinary rules and varieties of official misconduct that are essentially designed to preserve the authority of the correctional officers in domination of the inmates (DiIulio, 1987) -- such as insubordination to a staff member, disrespect or insolence towards staff member, and disobedience of a direct order, as well as the more catch-all category of "conduct which disrupts the orderly running of the institution" (Jacob & Sharma, 1982, p.21).

The Extent of and Influences on Inmate Misconduct

The violation of institutional rules and regulations is a very common occurrence within prisons. Based on an analysis of Bureau of Justice Statistics (BJS) data as reported in a recent 2016 National Institute of Justice (NIJ) special report, correctional facilities experience high rates of misconduct (roughly 949 incidents of misconduct per 1,000 inmates; Butler & Steiner, 2016). When comparing inmate misconduct to crime outside the institutional setting using published UCR crime report data (Federal Bureau of Investigation, 2015), Steiner and Cain (2017, p.166) that "average rates of inmate-on-inmate assaults are also two to three times higher (within prisons) than arrest rates for assaults among adults in the U.S. general population."

Even though inmate misconduct is a common occurrence within custodial facilities, incidents of misconduct are not evenly distributed across inmates or across prison facilities. The correlates and predictors of inmate misconduct have been

extensively researched within the institutional corrections literature; this research concludes that variations in the level and type of institutional misconduct can be attributed to the background characteristics of inmates (e.g., Beck & Harrison, 2010; Camp et al., 2003; Flanagan, 1982; Goetting & Howsen, 1986; Steiner, 2009; Steiner & Wooldredge, 2008a, 2008b; Sykes, 1958; Wolff, Blitz, Shi, Siegel, & Bachman, 2007; Wooldredge, 1998; Wooldredge & Steiner, 2014), their institutional routines and experiences while incarcerated (e.g., Camp et al., 2003; Griffin & Hepburn, 2006, 2013; Steiner, 2009; Steiner, Butler, & Ellison, 2014; Steiner & Wooldredge, 2008; McCorkle, Miethe, & Drass, 1995; Wooldredge, Griffin, & Pratt, 2001), the characteristics of the correctional facilities (e.g., Bierie, 2012; Camp & Gaes, 2005; Camp et al., 2003; Goetting & Howsen, 1986; Griffin & Hepburn, 2013; Wooldredge & Steiner, 2015; Wooldredge, Griffin, & Pratt, 2001), and elements of the institutional management structure itself (e.g., Colvin, 1992; DiIulio, 1987).

Since inmate misconduct is a common occurrence within correctional facilities, we can expect that disciplinary proceedings and the subsequent punishment outcome are also common occurrences. As such, that means that a significant proportion of inmates are subject to some form of disciplinary sanction/punishment following a misconduct proceeding at any given time.

Discretion within the Inmate Disciplinary Process

Discretion is inherent in nearly every stage of the institutional disciplinary process, and it begins with the initial decision to initiate the inmate misconduct process. When correctional officers observe or otherwise obtain knowledge of inmate violations of institutional rules, regulations, and procedures, they make the decision to handle the

matter informally or formally (Hewitt et al., 1984; Jacob, 1970; Light, 1980; Poole & Regoli, 1984). The decision to initiate the formal inmate disciplinary process (as opposed to "handle the matter" through some form of informal social control) in response to the less serious misconduct is a subjective, highly discretionary decision made by individual correctional officers (Cressey, 1959; Crouch, 1980; Freeman, 2003; Hewitt, Poole, & Regoli, 1984; Jones & Rhine, 1985; Lombardo, 1981; Thomas et al., 1991), similar to the discretion exercised by police officers in response to minor rule infractions (LaFave & Remington, 1965; Lipsky, 1980; Muir, 1977/9). Reinforcing this point, the Federal Bureau of Prisons policy number 5270.09 (Inmate Behavior Program), which specifies the inmate disciplinary process for all FBOP institutions, specifically states that "... staff [are to] take disciplinary action at such times and to the degree necessary to regulate an inmate's behavior within Bureau rules and institution guidelines and to promote a safe and orderly institutional environment" (U.S. Department of Justice, 2011, p.3).

A further layer of discretion is added to the decision to formalize inmate misbehavior into institutional misconduct when the correctional officer has to determine the specifics of the "charge" -- meaning type of misconduct offense, severity level (major or minor) of the offense, and the number of charges -- to include on the disciplinary ticket. Along this line, it is important to note that type and severity of the misconduct offense itself will be significant in the determination of the decision to formally charge. Minor misconduct offenses are more ambiguous, and less severe, thereby allowing discretion in how to respond. Prior research indicates that this decision to charge is influenced by the extra-legal factors of the inmate race/ethnicity and gender (Bell, 2017; Freeman, 2003)

Once inmate misbehavior is formally processed as an instance of institutional misconduct, the case proceeds through the formal disciplinary process. In contrast to the criminal court process, prison scholars suggest that the inmate disciplinary process is more dispositional or adjudicatory than adversarial in nature (Freeman, 2003; Harvard Center for Criminal Justice, 1972; Jackson, 1974; Parton, Stratton, & Shanahan, 1987). Reinforcing this assertion, qualitative research and personal accounts by inmates and prison staff suggest that there tends to be an informal presumption of guilt at the start of the prison disciplinary process (Jackson, 1974; Parton et al., 1987). Not surprisingly under these circumstances, the vast majority of cases that go through a disciplinary hearing receive a guilty determination. Although an inmate can technically appeal a punishment imposed subsequent to the disciplinary process, the fact is that the inmate disciplinary process is conducted fully internal to the institution. As such, any appeals are resolved within the prison bureaucracy and they are rarely, in fact, overturned (Calavita & Jenness, 2013).

Therefore, once the misconduct report is filed and a formal disciplinary hearing set, the primary decision to be made centers around the sanction, or punishment, outcome (Harvard Center for Criminal Justice, 1972; Freeman, 2003). This is a highly discretionary decision point as the prison administration and specific disciplinary personnel possess a considerable amount of latitude in the disciplinary actions that are assigned on a case-by-case basis (American Civil Liberties Union, 2005; Butler & Steiner, 2016; Fellner, 2006). This high amount of discretion is even reflected within institutional policy that commonly specifies a range of potential punishment outcomes for different types (e.g., contraband, verbal assault, order-related offenses) and categories

(major or minor, class of misconduct offense) of misconduct. These institutional policies also commonly leave room for the opportunity for overrides based on the specifics of individual case/s, as institutional administrators or disciplinary personnel deem appropriate (Babcock, 1981). Inmate rule books and other institutional documents outline the potential punishments associated with each rule violation, with the notation that each case depends on "factors such as the circumstances of the violation and the inmate's past record. Just as a sentencing judge takes into consideration a defendant's past record, it is common practice for disciplinary panels to review an inmate's file prior to imposing punishment" (Babcock, 1981, p.1081).

There are multiple reports that may be included within the inmate file that could guide the sanctioning decision, but some of the most important pieces of information for guiding this decision likely include the legal factors of prior institutional misconduct and disciplinary history, as well as the pre-prison arrest, conviction, and correctional/incarcerative history (Babcock, 1981). Yet it is highly likely these reports also will include other so-called quasi-legal and extra-legal information that could be directly relevant to the sanctioning decision. This ancillary information could include anything ranging from risk-need assessment information used to help guide custody determinations and internal housing and programming decisions, to demographic, background, and criminal history information, to reports of issues related to the current period of incarceration and/or prior disciplinary proceedings and sanctions. It is clear, then, that disciplinary personnel should have a good deal of information about the inmate and the specific misconduct situation that can help to inform the sanctioning decision at

this highly discretionary decision point.[5] We do not know from prior research, however, which of these types of information are more or less influential to the sanctioning decision following this internal disciplinary proceeding.

Prior Research on Disciplinary Sanctioning

In his work on discipline severity within prisons, Crouch stated that "we know relatively little about the factors which shape this (institutional) disciplinary decision" (Crouch, 1985, p.222). A review of the empirical literature that has been conducted in the past thirty years suggests that Crouch's conclusion is still valid: the factors which shape the outcome of the institutional disciplinary process have been largely ignored. Today, the manner in which various factors influence the sanctioning process within prisons largely remains an open-ended question.

This is surprising and somewhat troubling in light of the fact that this represents a discretionary decision point in which the disciplinary outcomes have direct implications for inmate freedom of movement and access to resources within the prison setting. Emphasizing the discretionary nature of this decision point, Parton and colleagues (1987) concluded that even though disciplinary committees operate fully internal to the institutional setting, there is evidence that "… the DC (disciplinary committee) usually has considerable discretion in determining the type and amount of sanction to be imposed on the inmate [for an alleged rule infraction]" (Parton, Stratton, & Shanahan, 1987, p.82; see also Harvard Center for Criminal Justice, 1972). Even though it has been the subject

[5] There were a series of USSC and other court decisions that limit attempt to limit the scope of discretion of prison officials in determining punishment decisions; however, these decisions largely apply to the single punishment outcome of solitary confinement or situations where sentences are extended. For a full discussion of relevant USSC and State court decisions associated with this decision point, see prior work of Bernstein (1974), Jacob (1970), Jacob & Sharma (1982), and Milemann (1971).

of only a handful of classic and contemporary studies to date, "the research literature contains expression of concern about the equity and consistency of DC discretion" (Parton et al., 1987, p.82; see also, Flanagan, 1982; Harvard Center for Criminal Justice, 1972; Thomas et al., 1991 as reported in Butler & Steiner, 2016).

The majority of research on this internal sanctioning decision was conducted in the 1980s and 1990s, yet the first look at this topic occurred a few decades earlier. At a time when institutional corrections research focused largely on institutional management structures and the general orientation of custodial institutions, Fox (1959) focused on the degree to which punishment would vary with orientation of the institution. This initial research, unsurprisingly, concluded that a more individualized and treatment-oriented approach to discipline occurred within those institutions that were aligned with a rehabilitative ideal, whereas there tended to be a more routinized, custodial-based disciplinary handling of disciplinary processes in control-oriented institutions (Fox, 1959).

In response to lawsuits over disciplinary proceedings and other inmate rights' issues, and in an effort to shift the focus of research to a more comprehensive examination of influences on the sanction outcome, the Harvard Center for Criminal Justice (1972) examined disciplinary proceedings in Rhode Island. Among the findings tp emerge is that there was only a limited correlation between the type of institutional misconduct charged and the type of punishment received for that violation. In other words, there was a lack of proportionality between the severity of the misconduct and the severity of its punishment outcome. Looking specifically at the security level of the facility, this study found a statistically significant yet modest correlation between level of

security of the facility and the disciplinary disposition, whereby punishment tended to be more severe in minimum than maximum security facilities. The Harvard Center for Criminal Justice study also was among the first to examine the relationship between sanction dispositions and inmate-level demographic characteristics. While the analysis concluded that inmate demographics had no consistent influence on punishment outcome, the authors specifically state that their research was limited by a lack of statistical rigor and weaknesses within the data that limited the type of analyses that could be conducted. Concluding this report, the authors were alert to the possibility that their finding regarding the lack of a significant relationship between inmate demographics and sanction outcome could be an artifact of their research design and the numerous limitations of the data. They note that they were unable to consider any interaction/s whereby the demographic data could be examined in tandem with other information regarding the category of misconduct committed, specifics of the individual incident, and the institutional history of the offender.

Research interest surrounding sanctioning within prisons was seemingly reinvigorated with a series of studies that were published starting in the early 1980s that focused on the exercise of discretion within inmate disciplinary proceedings. The research at this time concluded that age (Flanagan, 1982) and race/ethnicity (Crouch, 1985; Poole & Regoli, 1980) significantly impacted choice of sanction. Interestingly, race/ethnicity, specifically minority status, was not found to be a effect of sanction, with some scholars finding that non-white inmates received more harsh sanction outcomes (Poole & Regoli, 1980) and others concluding that there is either no relationship between race/ethnicity and sanction outcome (Harvard Center for Criminal Justice, 1972) or that

white inmates actually received more harsh sanction outcomes when compared to similarly situated non-white inmates (Crouch, 1985; Flanagan, 1982). Per the wider trend in general institutional corrections research, the influence of inmate gender and/or the difference in disciplinary practices between institutions housing male and female inmates was not examined in this body of literature (McClellan, 1994).

Beyond the influence of inmate personal characteristics, scholars also began at this time to examine how factors considered legally-relevant to the criminal sentencing process in the court system operate within the context of administrative disciplinary hearings for inmate misconduct internal to correctional facilities. A variety of legally-relevant factors, such as the type and severity of the misconduct offense (Crouch, 1985; Flanagan, 1982; Harvard Center for Criminal Justice, 1972), the number of misconduct offenses the inmate received for the current disciplinary hearing (Crouch, 1985; Harvard Center for Criminal Justice, 1972), and having a prior record of disciplinary infractions (Crouch, 1985; Flanagan, 1982; Harvard Center for Criminal Justice, 1972; Poole & Regoli, 1980) were also found to directly influence the disciplinary process and consequent punishment outcome in a positive direction such that the presence of these factors increased sanction severity.

Extending their research on the direct effect of inmate characteristics on disciplinary outcomes, one set of scholars then began to explore the existence of a potential interaction between inmate personal characteristics and other influential factors. Inmate race/ethnicity was found to influence the relationship between the inmate's prior record of institutional misconduct and punishment outcome (Poole & Regoli, 1980). The authors go on to conclude that, when comparing non-white and white inmates, having a

prior record of institutional misconduct has a greater effect on severity of sanction outcome for non-white inmates than it does for white inmates. This finding raises concerns that the interaction of non-white status and having a prior record of institution misconduct generate a situation where there is a more oppressive response of disciplinary action for non-white inmates than white inmates, further exacerbating perceptions of racial biases and disparities within the institutional setting itself (Poole & Regoli, 1980).

After a period of no research on this decision point post-1980s, research on the factors influencing sanction outcomes within prisons recently re-emerged within the literature (e.g., Butler & Steiner, 2016; Clark, 2018; Cochran, Toman, Mears, & Bales, 2017; Logan, Dulisse, Peterson, Morgan, Olma, & Pare, 2017; Olson 2016a; 2016b; Steiner & Cain, 2017). Conducted within the current correctional climate of mass incarceration, this body of research almost uniformly focuses on one specific disciplinary outcome – solitary confinement (for an exception see Steiner & Cain, 2017[6]).

Looking at the influence of inmate race on the likelihood of placement in solitary confinement following a disciplinary proceeding, Olson (2016a) found that black inmates are significantly more likely to experience solitary confinement than white inmates. The findings of this study, however, must be considered in light of the other variables that were included (and more importantly, not included) in the empirical models. Olson (2016a) did not include a statistical control for the type or severity of the instant misconduct offense, even though prior research has shown it to be highly associated with disciplinary sanction at both the bivariate and multivariate levels (see work of Crouch, 1985; Flanagan, 1982; Harvard Center for Criminal Justice, 1972). Switching focus from

[6] The sanction outcome under observation in Steiner & Cain (2017) is loss of earned "good time".

the influence of inmates' race/ethnicity on their likelihood of experiencing solitary confinement to examining the effect of the race of the inmate population at the aggregate level across correctional institutions, Olson (2016b) found that institutions with a higher percentage of black inmates utilize solitary confinement as a punishment outcome following disciplinary proceedings at a higher rate than do institutions with a lower percentage of black inmates. However, this piece of research also has some severe limitations, as it suffers from the same model misspecification concerns highlighted above.

Butler and Steiner (2016) examined the direct effect of various inmate and institution-level factors on the likelihood of receiving solitary confinement following a misconduct proceeding. They concluded that both legally-relevant criteria (prior misconduct history) and extra-legal factors (inmate age, holding a prison job) significantly influence whether an inmate is placed in disciplinary segregation. At the facility level (level two), institutions with a greater proportion of their inmate population involved in prison work and with a higher density of inmates classified as minimum-security were found to use the sanction outcome of disciplinary segregation less frequently. Surprisingly, however, and in contrast to prior research, Butler and Steiner did not find a significant direct effect of the type/severity of the instant misconduct offense on likelihood of receiving the sanction outcome of disciplinary segregation. This research did not incorporate possible interaction terms, so it is not known whether type of instant misconduct offense or any other legally-relevant factors would interact with the salient extra-legal inmate characteristics, as was demonstrated in prior research (Poole & Regoli, 1980).

Three additional studies that focus on disciplinary segregation as the dependent variable of interest have been published within the past year and a half (Clark, 2018; Cochran et al., 2017; Logan et al., 2017). In her recent research, Clark focused on and then confirmed a positive effect of having a pre-prison mental illness on the likelihood of receiving segregation, controlling for other salient factors. Logan and colleagues (2017) looked at potential race-based effects on the application of disciplinary segregation. Initial results of their study suggest that black inmates are roughly 20 percent more likely to receive disciplinary segregation, but that statistically significant effect was reduced to non-significance when the effects of criminal history and the specifics of the misconduct were included in the models. Looking at the other race/ethnicity groupings, inmates who report falling into the other racial/ethnic category were significantly less likely to receive solitary confinement controlling for the effect of other variables in the fully-saturated multivariate model. The effect of Hispanic race/ethnicity was not consistent across the four models presented in this research, achieving significance in only one of the two fully-saturated models. The most consistent and significant relationships were found between prior misconduct history and severity of current misconduct offense and the likelihood of receiving solitary confinement. As such, the authors conclude that future research should being to examine potential interactions between these variables (considered "legal factors" in the current research) and other important factors when looking at influences on post-disciplinary punishment outcome (Logan et al., 2017).

Using different data and a slightly different modeling strategy, Cochran and colleagues (2017) conducted a set of analyses similar to those of Logan et al (2017) that was published at about the same time. This study also focused on racial/ethnic disparities

in the use of disciplinary segregation. Taking the analyses a step further than Logan, however, Cochran and colleagues also looked at the interaction of race/ethnicity with gender and age in the likelihood of disciplinary segregation. Looking at the direct effects of race/ethnicity, as was the case with the findings in Logan et al.'s paper, results suggest that the initially significant negative effect that white inmates are less likely to receive disciplinary segregation when compared to black inmates remains significant in the next model with the inclusion of variables that are associated with criminogenic risk (prior incarceration, offense of incarceration, sentence length, time served), but that effect is then then completely removed in the final model with aspects of the disciplinary infraction included. When the analyses expanded to include a series of two and three-way interactions between race/ethnicity, gender, and age, however, all the significant relationships were reduced to non-significance, with the exception of the significant gender and age, and gender-by-age interactive effects.

As mentioned previously, there is only one recent piece of empirical research on the current decision point that looks at any sanction option other than solitary confinement/disciplinary segregation. Steiner & Cain (2017) look at the loss of accumulated "good time" as the dependent variable in their recently published work. Following their analyses, Steiner and Cain concluded that when making the decision to remove good time as a response to inmate misconduct, prison officials are influenced by the severity of the instant misconduct offense and the type of rule violation, as well as the inmates' prior misconduct history while incarcerated, gang status, and mental health problems. Comparing the results of this study to that of Butler and Steiner (2016), we see that the legal factor of type/severity of instant misconduct offense appears to be a salient

factor influencing the sanctioning decision for certain punishment outcomes (removal of good time) but not for others (placement in solitary confinement). This raises concerns about how and why there is variation in the influence of this same factor -- type/severity of instant misconduct offense -- which arguably should be the most salient legal factor to consider during the sanctioning process. It must be acknowledged, however, that this difference in significance could be a methodological artifact, as these two studies were conducted on two different samples.

Limitation of prior research: Operationalization of the dependent variable. While this is a research area that is once again gaining traction with those who study discretionary decision making in the criminal justice system, there is still a sheer lack of rigorous, systematic, empirical research on the decision point of sanction/punishment outcome following disciplinary proceedings conducted in the contemporary prison environment. Additionally, this body of research findings discussed above is limited by the fact that the dependent variable of disciplinary sanction has been operationalized as a dichotomous outcome in all studies of which the author is aware published to date. Beyond this use of a dichotomous, presence-or-absence of a specific type of punishment operationalization of the dependent variable, the vast majority of the studies to date have focused on one specific punishment option – that being disciplinary segregation/solitary confinement. As such, this body of research does not take advantage of the opportunity to examine the influence that various legal, quasi-legal, and extra-legal inmate characteristics have on likelihood of receiving a sanction within the *full range* of potential punishment options. In order to move beyond the current state of the literature and contribute to our understanding of influences on this decision point, this study views

disciplinary sanctioning as a choice of one specific punishment out of a full punishment continuum that objectively ranges in severity regarding further restrictions placed on inmate freedom of movement. This "sanction severity scale" operationalization of disciplinary punishment outcome will be discussed more fully in the section on Operationalization and Measurement in Chapter 3.

Summary

The inmate disciplinary process, and the factors that influence the accompanying sentencing decision/punishment outcome, is one of the "least visible proceedings in the administration of justice" (Poole & Regoli, 1980, p.932). As such, it represents an understudied decision point within the criminal justice process that has experienced a lack of systematic, empirical research. Research on discretionary decision making at various stages of the criminal justice process suggests that differential processing may occur based on a variety of legal, extra-legal, and quasi-legal factors; and that discretionary decision making may be more likely to occur in those areas of the process that are less public and therefore less visible (Bushway & Forst, 2013), such as the punishment outcome following a finding of guilty following inmate misconduct proceedings. As has been discussed throughout the literature review, the extent to which disparity based on quasi- and extra-legal factors occurs within the choice of disciplinary punishment outcome following misconduct proceeding is largely unstudied.

This study will contribute to our understanding of this discretionary decision by examining the influence that various inmate- and facility-level characteristics have on the sanctioning or disciplinary punishment outcome following inmate misconduct proceedings. As it is largely informed by sentencing research within the criminal courts,

inmate level-characteristics included in the current research will be operationalized into groups of legally-relevant (legal), quasi-legal, and extra-legal factors. By way of methodological contributions to the literature, the proposed study will be the first to explore the various influences on sentencing within prisons with an outcome variable operationalized in terms of the *full continuum of severity of possible punishment options*. Additionally, the methodology of the current research will expand the current body of literature by examining these relationships with a national sample of male and female inmates housed in a large number of state and federal prisons across the United States.

Prior to moving on to a discussion of the research questions and specific hypotheses that guide this research in Chapter 2, the remainder of this chapter will provide an overview of the theoretical perspective that provides a framework to explain why legal, quasi-legal, and extra-legal characteristics of inmates exert a significant influence on punishment outcomes.

Theoretical Perspective

The focal concerns perspective has been proposed as a theoretical framework within which to attempt to understand and explain influences on decisions made by criminal justice actors (Albonetti, 1991; Steffensmeier et al., 1998). Originally developed and used to explain the sentencing component of judicial decision making, the focal concerns perspective has also been applied to other discretionary decision points in the criminal justice process, including: police officer behavior during traffic stops (Higgins, Vito, & Grossi, 2012) and police use of force (Crow & Adrion, 2011); prosecutorial decision making (Ball, 2006; Sherman & Johnson, 2010); and parole decision making

(Huebner & Bynum, 2006). The focal concerns framework has also been applied to specialized courts, such as juvenile courts (Harris, 2009) and mental health courts (Ray & Brooks Dollar, 2013), to help explain influences on decision making within more unique court contexts that operate outside of the legal parameters of the criminal court system.

Since the reinvigoration of research on the current decision point of institutional disciplinary sanctioning, multiple studies have grounded their research within the focal concerns perspective (Butler & Steiner, 2016; Cochran et al., 2017; Logan et al., 2017). Focal concerns theory provides an explanatory framework through which to consider the influence of inmate characteristics on punishment outcome following disciplinary proceeding. To the extent that the institutional disciplinary process and sanctioning decisions parallels sentencing decision making in the court setting, it is anticipated that focal concerns will provide a useful mechanism through which to examine and then explain potential disparities in punishment outcome. The assumption is that inherent biases that influence discretionary punishment judgments extend from the community (in terms of sentencing decisions within the criminal courts) into the institutional setting (Irwin, 1980, 2005; Marquart, 1986; Steiner & Wooldredge, 2009; Trulson & Marquart, 2002). In a way, then, the focal concerns perspectives is the explanatory mechanism through which this study will attempt to explore and understand the influence of various inmate characteristics on the amount of formal social control inmates receive as post-disciplinary punishment severity.

Focal Concerns Theory

According to this theoretical perspective, there are three primary considerations (or "focal concerns") that criminal justice actors balance when making sanction

decisions. These are: assessment of offender blameworthiness, a desire to protect the community, and the practical constraints and consequences of sanction decisions on local (justice system) resources (Steffensmeier, Kramer, & Streifel, 1993; Steffensmeier et al., 1998). Each of these focal concerns is operationalized in a different way in empirical research, and each has a different theoretical justification or underpinning as to why and how it should influence the sentencing process.

The focal concern with offender blameworthiness largely assesses the severity of the offense. Offense severity can be conceptualized in multiple ways, but it is most commonly discussed in terms of the culpability of the defendant and the harm caused (the victim) by the offense (Steffensmeier et al., 1998). Severity of the offense is commonly categorized in rather objective, legal terms with considerations such as aggravating factors of the offense and measures of harm caused to the victim. However, offense severity is also associated with subjective measures such as crime wrongfulness, which are associated with assessments of blameworthiness and appropriateness of criminal sanctions (Farrell & Holmes, 1991; Miller, 1994). Beyond offense severity, perceptions of offender blameworthiness are also influenced by other aggravating factors such as an individuals' criminal history and the role the individual played in the offense (e.g., whether they were the leader or a follower), both of which can serve to increase assessments of offender blameworthiness. Some mitigating factors can also serve to decrease offender blameworthiness, such as severe mental health problems or crisis, an extensive history of prior victimization, and the like (Steffensmeier et al., 1998).

The second focal concern considered during the sentencing process is the desire to protect the community. Protection of the community is largely concerned with the

dangerousness of the offender with regard to assessment of future behavior. Here, considerations of future dangerousness involve perceptions of the dangerousness of the offender and judgments that the offender will recidivate – elements of criminogenic risk (Steffensmeier et al., 1998). In empirical research, this focal concern is commonly operationalized as elements of criminogenic risk (especially risk for future violence), the nature of the current offense, specific case information, and criminal history. Other considerations for this focal concern also can include both aggravating and mitigating offender-level characteristics, such as employment history, education level, drug dependence and addition, prior history of abuse, and mental illness (Steffensmeier et al., 1998).

The third focal concern recognizes that there are practical constrains and consequences of sentencing decisions, and that these consequences can be at both the organizational-level and the level of the individual offender (Steffensmeier et al., 1998). Organizational concerns can include concerns regarding the courtroom work group and maintaining relationships among courtroom actors, maintaining a stable flow of cases through the court process, and considerations for local and larger state correctional resources (e.g., financial resources, personnel demands, and levels of overcrowding; Dixon, 1995; Ulmer, 1995). Practical concerns and consequences for the offender include, among others, judgements regarding the offenders "ability to do time" – which can be influenced by factors such as mental illness, health problems, and other personal needs – and disruption to pro-social bonds such as family/children, employment, schooling, addiction treatment and programming, and the like (Steffensmeier et al., 1998).

These three considerations, while in practice operating in tandem to influence the sanction (e.g., Steffensmeier et al., 1998), are in fact grounded in different theoretical perspectives on offending and punishment. As described by Steffensmeier and colleagues (1993, 1998) in the original statements of this theoretical perspective, the focal concern of desire to protect the community suggests that offenders should be incapacitated (and would-be offenders deterred from engaging in criminal behavior) in order to minimize the risk that offenders inherently impose on the community. Assessment of offender blameworthiness, however, shifts the focus from incapacitation and risk-management/reduction towards a retributive or "just desserts"-related focus, suggesting that some offenders deserve more severe punishment due to elements related to the severity of their offense and the level of perceived culpability for their offense-related actions (Steffensmeier et al., 1998). The focal concern regarding the practical constraint's and/or consequences of sanction decisions shifts focus from the offender to the organizational consequences of sentencing decisions, such as the expected impact that this decision will have on the local criminal justice system and various agency-level resources (Dixon, 1995; Steffensmeier et al., 1993; Ulmer, 1995; Ulmer & Kramer, 1996).

Within sentencing research, the decision point most closely related to that under observation in the study, operationalization of the three focal concerns includes variables that can be categorized as both legal and extra-legal factors (Hartley, Maddan, & Spohn, 2007; Steffensmeier et al., 1998). For example, the focal concern of protection of the community is commonly operationalized as aggravating circumstances of the offense/offender (violent crime of instant offense, drug offense, weapon use, prior

criminal history) and indicators of social stability (e.g., marital status, citizenship status). Indicators of assessments of offender blameworthiness largely involve the legal factors of criminal history, offense seriousness/severity, and the number of charges of conviction. Finally, the operationalization of practical constraints varies across research and is dependent on the location of the research and the nature of the data themselves.

Connection of focal concerns theory and the intersectionality perspective. Recent elaborations of the focal concerns perspective have integrated it with the intersectionality perspective discussed previously (e.g., Steffensmeier & Painter-Davis, 2018; Steffensmeier, Painter-Davis, & Ulmer, 2017). Integrating these two perspectives together, it seems very possible that "combinations of status characteristics shape the focal concerns in ways that are unique and not present when separate status categories are considered in isolation" (Steffensemeier et al., 2017, p.827). This integration asserts that the impact that the factors representing each focal concern have on sanction outcome is influenced by inmate status characteristics, which include race/ethnicity, age, and gender (Steffensmeier et al., 2017; Steffensmeier & Painter-Davis, 2018).

Focal Concerns and Disciplinary Sanctioning

The three focal considerations of desire to protect the community, assessment of offender blameworthiness, and practical constrains and consequences as outlined by focal concerns can broadly be applied to decisions regarding punishment outcomes in an institutional setting, as noted in prior research (Butler & Steiner, 2016; Cochran et al., 2018; Logan et al., 2017). Due to the parallels between the inmate disciplinary process and criminal sentencing, common operationalizations of the focal concerns within

empirical sentencing research have strong parallels within those that can be used for research within institutional corrections and inmate disciplinary proceedings.

For example, factors considered for the focal concern of judgements of offender blameworthiness largely revolve around those representing offender risk level and offense severity. Mitigating and controlling inmate risk is a dominant concern within prisons, so it is logical to assume that inmate risk level is continually monitored and tracked on institutional case files. Similarly, the formal misconduct reports that initiate the disciplinary process include specifics of the misconduct offense, so the disciplinary committee has insight into the severity of the misconduct offense, the amount of harm caused, and other elements of offender blameworthiness. Prior research has established that various individual status characteristics, namely the extra-legal characteristics of race/ethnicity, age, and gender, influence both explicit and implicit perceptions of wrongfulness, harmfulness, and/or blameworthieness (Miller, 1994; Steffensemeier et al., 1998). By way of example, it could be that disciplinary personnel view "blameworthiness" as those who are incarcerated for specific offenses (e.g., person or violent offense), and/or who commit a more severe form of misconduct, and/or who have a more serious misconduct history, and therefore as deserving of a more severe punishment outcome.

The second focal concern – protection of the community – is appropriate within the prison community. The prison community consists of inmates, security staff, and a wide variety of professional and civilian staff, as well as property and resources. As such, the safety and stability of the prison community is a primary concern for correctional administrators. Inmate risk level, prior history of misconduct offenses, and severity of

current offense enter into disciplinary personnel's judgments regarding the amount of formal social control needed to protect the institutional community from future misconduct.

The third focal concern of practical constrains and consequences of various sanction outcomes is directly applicable to the institutional setting. When thinking about the practical constraints and consequences at the organization level, this focal concern speaks directly to the resources that are available to support each punishment option, and recognizes that these resources are finite. In this case, resources necessary to accommodate various post-disciplinary sanction options include, for example, security staff/personnel, the requisite physical space available for assigning inmates various sanctions (e.g., cell space available within the institution to transfer an inmate to disciplinary segregation), and the ability to reassign an inmate to another location within the same (state or federal) correctional system.

Beyond these institution-level concerns, it is possible that disciplinary boards might consider the inmates' ability to "do time" in various disciplinary sanctions the same way that judges potentially take the defendants personal circumstances in to consideration before sentencing. For example, an inmate with a documented history of severe mental illness might be less likely to receive a disciplinary sanction of placement in disciplinary segregation/solitary confinement if the members of the disciplinary committee feel that the inmates' mental illness might be exacerbated by placement in disciplinary segregation (Clark, 2018).

Conclusion

Having established that the sanction outcome following inmate disciplinary proceedings is a discretionary decision point with important implications for inmate life within correctional settings, this chapter provided an overview of the body of empirical sentencing research that identifies the salient legal, quasi-legal, and extra-legal inmate characteristics that influence sentencing outcomes within the criminal courts. The literature review then went on to on to apply that same legal, quasi-legal, and extra-legal framework to the discretionary decision that occurs within prisons, before moving on to discuss the small body of older and more contemporary research that has been conducted on this decision point. This review of the research illuminated a significant and problematic weakness in prior research on this decision point to the extent that it has applied only a dichotomous, presence versus absence, indicator of one specific potential punishment option at a time; and that with very few exceptions, the punishment outcome under observation has uniformly been that of disciplinary segregation/solitary confinement.

The current research goes far beyond the limitations of prior research and explores the effect of inmate-level characteristics on punishment decisions for the full range of possible sanction options. As evident in the discussion of focal concerns theory, the nature of the hypothesized relationships between various inmate characteristics (legal, quasi-legal, and extra-legal factors) and punishment outcome are consistent within and empirically relevant to extending research on the "focal concerns perspective". It is to these hypotheses, and the specific research questions that they are framed within, that this research now turns to in Chapter 2.

CHAPTER 2

RESEARCH PROBLEM

Current Focus

This research explores the independent and combined effects of a variety of inmate-level characteristics that are hypothesized to influence the choice of punishment outcome following the inmate disciplinary process. There are two dominant research questions that guide this research. Initially, this research looks at the direct effects of various inmate characteristics on punishment outcome, while considering the inmate characteristics in groups of legal, quasi-legal, and extra-legal factors. Moving beyond the direct effects, the second research question models the interactive (or conditional) effects of the legal and quasi-legal factors on the punishment outcome.

The specifics of variable operationalization and measurement are discussed in Chapter 3, yet it will be helpful to provide a quick overview of how the inmate-level characteristics were grouped into categories of legal, quasi-legal, and extra-legal factors for the current study. Similar to the conceptualization of legal factors within sentencing research in the criminal court system, the legal factors are variables related to the instant misconduct offense and inmate misconduct history. Quasi-legal factors, while not a categorization that is commonly used in this type of research, include inmate characteristics and institutional history variables that are associated with perceptions of risk and pros-social activities within the prison setting (e.g., category of offense of incarceration, time served, and involvement in work assignments and/or substantive

programming opportunities). Consistent with sentencing research, the extra-legal factors under observation are gender and race/ethnicity[7].

Research Questions and Hypotheses

To begin the analyses, Research Question One (*RQ1*) will explore the direct influence of the individual, inmate-level variables on the dependent variable of punishment outcome, controlling for the fixed effect of the institutional setting on punishment outcome. With Research Question Two (*RQ2*) the analysis will then proceed to incorporate interactions (both two- and three-way interactions) among the inmate-level characteristics into the multivariate models predicting punishment outcome. Each of these research questions, and the specific hypotheses that will be tested within each area, are discussed below.

Research Question One – Direct Effects of Inmate-Level Characteristics

Research Question 1: What is the nature of the relationship between various inmate characteristics – categorized into groups of legal, quasi-legal, and extra-legal factors – and punishment outcome?

The first research question in the study involves the extent to which individual-level (inmate) characteristics influence the sanction outcome within prisons. Guided by sentencing and sanctioning research within the criminal courts, the individual-level factors are divided into categories of legal, quasi-legal, and extra-legal characteristics. Within this research focus, a number of complimentary hypotheses will be tested. First, it is anticipated that when holding constant the statistical effect of various controls at the

[7] Due to limitations of the data, age is considered a control variable and not extra-legal factor, as the age variable indicates age at time of interview not specifically age at time of formal misconduct and disciplinary proceeding.

inmate and facility level, each of the theoretically informed variables, those being inmate characteristics divided into groups of legal, quasi-legal, and extra-legal factors, will be significantly associated with disciplinary sanction outcome. Then, once all variables are included in a fully saturated model, it is anticipated that the legal and quasi-legal factors will be significantly associated with sanction outcome, while the effect of the extra-legal factors will be diminished.

- *Hypothesis 1: In a series of partial models where each group of factors (categorized into groups of legal, quasi-legal, and extra-legal factors) is included in a model with just the control variables, all of the independent variables in each partial model will be significantly associated with the severity of punishment outcome at the multivariate level.*

- *Hypothesis 2: When all variables are incorporated into a fully saturated estimation model predicting sanction severity, the legal and quasi-legal factors will remain significant predictors of sanction severity while the effect of the extra-legal factors will be diminished.*

Research Question Two – Interactions Among Inmate-level Characteristics

Research Question 2: Beyond the significant direct effects, do the extra-legal factors (gender and race/ethnicity) condition the effect of the legal and quasi-legal factors on punishment outcome?

The second research question begins to examine the existence of and relative influence of potential interaction effects among the individual-level factors and disciplinary punishment outcome. The analyses for the second research question take an approach guided by the intersectionality literature to investigate potential interactions between the extra-legal factors representing inmate demographic characteristics and the legal and quasi-legal factors, and whether this interaction influences the choice of punishment outcome. Guided by prior research within the area of sentencing (e.g., Brennan, 2016; Daly & Bordt, 1995; Johnson & Betsinger, 2009; Spohn, 2000; Steffensmeier & Demuth, 2000; 2001; 2006; Warren, Chiricos, & Bales, 2012; Zatz, 2000), the analysis will examine whether the legal and quasi-legal factors significantly interact with the extra-legal factors (gender and race/ethnicity of the inmate) to influence choice of punishment outcome. In a way, the extra-legal factors of race/ethnicity and gender are considered to moderate the relationship between punishment outcome and the legal- and quasi-legal factors, since they are hypothesized to influence the strength, direction, or significance of the relationship between the independent variables (legal/quasi-factors) and dependent variable (punishment outcome; Jaccard & Turrisi, 2003).

This set of analyses will examine whether the two extra-legal factors, gender and race/ethnicity, interact to significantly predict punishment outcome beyond the direct effect of either race/ethnicity or gender. As mentioned in the literature review in Chapter 1, scholars who identify with an intersectionality-based theoretical approach to understanding influences on criminal justice decision points suggest that while the influence of race/ethnicity and the influence of gender themselves are important to

consider, it is also important to acknowledge that race/ethnicity and gender can interact to further influence criminal justice outcomes (e.g., Zatz, 2000). Acknowledging this, the final analyses will incorporate two- and three-way interactions among inmate-level characteristics. The relevant two-way interactions include those between the extra-legal and legal factors and the extra-legal and quasi-legal factors, as well as interactions between the extra-legal factors of gender and race/ethnicity themselves. A final variable will be incorporated into the model representing a three-way interaction between gender-race/ethnicity-and the legal factor of inmate misconduct offense.

- *Hypothesis 3: Race/ethnicity and gender will interact with the legal factors to significantly influence the severity of the punishment outcome, reducing the direct effect of these individual variables.*

- *Hypothesis 4: Race/ethnicity and gender will interact with the quasi-legal factors to significantly influence the severity of the punishment outcome, reducing the direct effect of these individual variables.*

- *Hypothesis 5: The three-way interaction between race/ethnicity – gender – each of the legal factors (instant misconduct offense and prior misconduct history) will be significantly associated with punishment outcome.*

CHAPTER 3

METHODS

Data and Sample

The research questions and hypotheses outlined in Chapter 2 will be tested with a combined dataset including both federal and state data from a sample of incarcerated male and female inmates housed in adult prison facilities in the United States. Data come from the restricted access version of the 2004 Survey of Inmates in State and Federal Correctional Facilities (SISFCF), ICPSR study number 04572 (Bureau of Justice Statistics, 2004). The combined SISFCF data set is composed of data obtained from the 2004 Survey of Inmates in State Correctional Facilities and the 2004 Survey of Inmates in Federal Correctional Facilities.

The SISFCF has been an ongoing survey research project conducted by the Bureau of Justice Statistics for the Bureau of the Census since 1974. While another wave of the Survey of Inmates was recently conducted in 2015-2016, the 2004 data are the most current data available in this series. As reported in the Bureau of Justice Statistics codebook for the 2004 SISFCF, this study provides nationally representative data on inmates incarcerated in State and Federal prisons (USDOJ, 2004). Data for the 2004 SISFCF were collected through personal interviews conducted by trained Census department interviewers on behalf of the Bureau of Justice Statistics on location in correctional facilities from October 2003 through May 2004. Sampled inmates in state and federal facilities who consented to participation in the study were interviewed and asked to self-report about a variety of subject matters, including: current offense and sentence, criminal history, family background and personal (demographic)

characteristics, prior drug/ alcohol use and treatment programs, gun possession and use, and, most relevant for the current study, prison activities, programs, self-reported inmate misconduct, and services received while incarcerated. The in-person interviews, roughly an hour in length, used computer-assisted personal interviewing procedures. Prior to the start of the interview, inmates were told verbally and in writing that participation was voluntary and that information would be confidential, to which sampled inmates gave their informed consent to participate in the interview.

Sample Design of the SISFCF

The sample of inmates to be used for both components of the SISFCF (i.e., the state and federal components) was drawn using a two-stage sample selection design, whereby prisons were selected in the first stage and inmates within sampled prisons in the second stage (USDOJ, 2004).

First-stage sampling. First, the SISCF and SIFCF universe files were obtained for all state and federal facilities holding adult inmates on January 4, 2003. The universe file for the SISCF contained 1,585 state-operated correctional facilities, while the universe file obtained by the Federal Bureau of Prisons for the SIFCF contained 148 federally operated prisons. For each state and federal list, the total universe was separated into two sampling frames – one for institutions that house male inmates and one for institutions that house female inmates.[8] The procedure left a total of 1,435 state male

[8] Institutions holding both male and female inmates (State institutions, n=216; Federal institutions, n=0) were included in both the male and female sampling frames.

prisons and 366 state female prisons. In comparison, there are 131 federal male facilities and 17 federal female institutions[9].

From this point, the inmate samples were drawn using a stratified sampling procedure. State facilities were divided, by gender, into eight location-based strata defined by census region (Northeast except New York, New York, Midwest, South except Florida and Texas, Florida, Texas, West except California, and California). Within each stratum, facilities were ordered by size of inmate population. Using selection based on probability proportional to size within each stratum,[10] 231 male state prisons and 66 female state prisons were selected. A reserve sample of 16 male and 4 female prisons was selected for inclusion in the event that an insufficient number of prisons in the original sample agree to participate.

In a similar stratification procedure based on inmate characteristics instead of geography, the universe of male federal facilities was divided into five strata based on security level of the institution (administrative, high, medium, low, and minimum). The universe of female federal facilities was grouped into two security-level based strata (minimum and all other security levels). Similar to the state procedure, within each stratum the federal facilities were ordered by size of inmate population and selected for inclusion with probability proportional to size. First-stage sampling resulted in selection of 32 male federal facilities and 8 female federal facilities.

Second-stage sampling. In the second-stage of sample selection for the state (SISCF) sample, interviewers selected inmates for interviewing from a list provided by

[9] Institutions which reported majority population in medical, mental health, and geriatric care functions were removed from the sampling frames for the SISCF and SIFCF.
[10] See code book for ICPSR Study 04572 for more information on the first-stage sampling procedure.

each facility which included all inmates using a bed within that facility the previous night. After each inmate on a given facilities' list was assigned a number, computerized procedures including a randomly selected start point and predetermined skip interval and a sample of selected inmates was selected based on the numbers corresponding to the facility inmate list. Final state facility samples included 13,098 inmates housed in 231 male correctional facilities and 3,054 inmates housed in 66 female correctional facilities, making for a total of 16152 state inmates that were sampled for inclusion in the SISCF interview pool.

Second-stage of sample selection for the federal sample was done in a purposive manner to ensure that there would be a large enough population of nondrug offenders. Using a random start and predetermined skip interval, an oversample of inmates was initially selected so that nondrug offending inmates would be included in the sample in large enough numbers to be analyzed. Sampling procedures resulted in a final sample size of 3,347 male inmates housed in 32 federal facilities and 1,009 female inmates housed in 8 federal facilities.

The full sample for the SISFCF, then, included 20,508 male and female inmates housed in 337 state and federal facilities. Of those 20,508 inmates approached for participation in the study, 18,185 inmates housed in 326 facilities completed the interview (minimum = 5, maximum = 138, average = 32.01, standard deviation = 22.79). The combined SISFCF dataset includes data on a variety of information from those 18,185 inmates. Total nonresponse for each survey includes both first-stage and second-stage non-response for both the SISCF and SIFCF. The total nonresponse rate for both the SISCF and SIFCF was roughly 9%. The SISCF data includes 14,449 completed

interviews (nonresponse rate= 8.79%). The total number of completed interviews for the SIFCF was 3686 (nonresponse rate= 9.07%). Following the two-stage sampling procedure, according to the 2004 SISFCF code book,

> "approximately 1 in every 85 males and 1 in every 24 females in State facilities were selected in the State survey and approximately 1 in every 32 males and 1 in every 9 females were selected in the Federal survey" (USDOJ, 2004, p.8).

Sample weights as provided on the restricted data set were applied to correct for the inverse of each inmates' probability of selection into the sample at both the first (facility-level) and second (inmate-level) stage of sampling (USDOJ, 2004).

Sample for Current Study and Unit of Analysis

Due to the nature of the research questions in the current study, the study sample is limited to only those inmates who self-report that they had been found guilty of some form of inmate misconduct following the formal institutional disciplinary process during the current term of incarceration. Consequently, data for the study includes the full population of 8,300 inmates who were found guilty during the formal disciplinary process from the larger sample of 18,185 inmates interviewed for the SISFCF (see Table 1). In terms of specific breakdown by type of facility and gender, the study relies on data from 8,300 inmates (6,811 male and 1,489 female) housed in 286 State correctional facilities (number of inmates = 7,217) and 39 Federal correctional facilities (number of inmates = 1,083; total number of facilities = 326). By definition, then, each of the inmates in the sample of interest self-reported that she or he (1) received some type of formal

misconduct ticket from a correctional officer during their term of incarceration, (2) that resulted in the inmate going through the institutional disciplinary process, and (3) received a finding of guilty at the conclusion of that disciplinary hearing.

Table 1. Descriptive Statistics: SISFCF Combined and Component Datasets

	Total # (%)	**State # (%)**	**Federal # (%)**
Full sample of SISFCF	20,508	16,152	4,356
Completed interviews	18,185	14,499	3,686
Selection Variable Subsample[a]			
Formal Misconduct/Guilty Disciplinary Hearing	8300	7217	1083
	(46.57)	(49.78)	(29.38)
Gender			
Male	6812	5918	894
	(82.07)	(82.00)	(82.55)
Female	1488	1299	189
	(17.93)	(18.00)	(17.45)
Race			
White (non-Hispanic)	2858	2583	275
	(34.49)	(35.86)	(25.42)
Black (non-Hispanic)	3591	3082	509
	(43.34)	(42.78)	(47.04)
Hispanic	1305	1099	206
	(15.75)	(15.26)	(19.04)
Other	532	440	92
	(6.42)	(6.11)	(8.50)
Received Any Disciplinary Action[b]	6775	5829	944
	(81.63)	(80.77)	(87.17)

NOTES: Values are frequencies, percentages in parentheses

[a] Data on selection variable missing for 362 subjects (2.0%)
[b] Data on dependent variable missing for 804 subjects (9.7%); 721 (8.7%) cases removed for "other" punishment option

Of the total 18,185 inmates interviewed, roughly 45% of them (8,300) received a guilty misconduct finding. Further breaking down the numbers we see that of the 8,300 inmates who received a guilty finding during the disciplinary process, 7,496 (90.31%) of

those inmates received some form of disciplinary action following the disciplinary proceeding. Comparing inmates in state and federal facilities, roughly fifty percent (49.95%, n = 7,217) of state inmates report a guilty misconduct finding as compared to the fewer than 30% (29.38%, n = 1,083) of federal inmates who do. Both state and federal inmates who receive a guilty misconduct finding, however, are similarly likely to experience some form of disciplinary sanction for that misconduct offense (just under 85% and 90%, respectively).

The study focuses on inmates who have had a guilty finding following the formal inmate disciplinary process as a way to assess the direct and interactive effects of individual-level influences on the punishment outcome at this unique decision point in the criminal justice system. In a way, the study uses the outcome of the decision point as a method by which to extend the literature on various legal and extra-legal influences on criminal justice system decision points to a yet under-researched one. The unit of analysis for this study is at the inmate level, as there is only a single sanctioning or punishment outcome for each inmate in the sample. In the case of multiple self-reported misconduct offenses and disciplinary proceedings, the analyses rely on information from the most recent during the period of incarceration. The study, then, focuses on the influence of direct and interactive effects of various legal, quasi-legal, and extra-legal inmate-level factors on the severity and type of punishment outcome following guilty inmate misconduct proceedings.

Inherent Nesting Structure of Data

As disciplinary hearings experienced by individual inmates are handled at the facility level, the ideal data structure to examine the hypotheses for the study would be a

tri-level dataset whereby individual inmates are nested within prisons, which are nested within larger state (or federal) correctional systems. This sort of multi-level structure would allow for the statistical modeling procedure to reflect the acknowledgement that all inmates housed within the same prison/institutional setting are subject to the same set of polices, practices, and procedures, all of which can have a direct impact on the dependent variable as well as the key theoretical variables. Similarly, nesting prisons within larger correctional systems at the state or federal level allows for the modeling procedure to reflect and appropriately react to the acknowledgement that policies at the system level can and should influence all prison facilities that operate within that system in a similar manner (Primo, Jacobsmeier, & Milyo, 2007).

Due to limitations within the secondary data set for this study, it is unfortunately not possible to nest correctional institutions within state systems (i.e., there are no level three predictors for the state data). It is possible to identify all inmates who are housed within the same facility, but the data contain no way to determine the specific facility or even larger state system based on the facility identification variable available in the restricted access version of the SISFCF. However, the federal facilities all operate/s under the same system-level policies (that is, all federal institutions are operated under the policies and direction of the Federal Bureau of Prisons). It is very likely, then, that system-level policies consistent across all prisons within the FBOP will impact the disciplinary outcomes of individual cases, which will affect the standard errors for cases in the federal data. We can account for this in the federal data by using a level-three control and holding the effect of prison system constant.

Unfortunately, we do not have this same ability to identify which correctional institutions in the state (SISCF) sample actually operate within the same state-level correctional system, eliminating our ability to control for system-level policies with any level three-indicators in the state data. The current analyses, then, rely on a two-level data structure whereby individual inmates are nested within the same correctional institutions.[11] The modeling strategy employed to address the research questions accounts for this nesting and the general effect of institution on the dependent variable by incorporating a facility indicator into the models as a covariate. This allows for the effect of the facility environment (i.e., institutional culture, administrative practices, disciplinary practices, staff-inmate relationships, aggregated inmate characteristics and risk profiles, aggregated inmate misconduct trends) to exert a consistent effect on the dependent variable for all inmates housed within the same facility; it is reasonable to assume that the effect of the above-mentioned level-two characteristics will operate more similarly within facilities than between facilities (e.g., Logan et al., 2017). In a way, then, level-two characteristics of the facility are incorporated into the models via a fixed effect that represents the facility in which the inmate was incarcerated at the time of the interview.

Potential Selection Bias and Correction with Sample Selection Models

Like sentencing decisions in the court system, sentencing decisions following the inmate disciplinary process are one of the final decisions in a long system of decisions

[11] A level-two dichotomous variable indicating whether a specific institution is within the Federal Bureau of Prisons or a State system will be included in multivariate models to account for the absence of level three indicators (which would allow for the clustering of prison facilities within larger State correctional systems.

(essentially a cumulative decision) made by a multitude of correctional (and other criminal justice) officials. It is possible that by the time the sentencing decision following inmate misconduct proceedings is made, a host of other processes have occurred that might or might not have been influenced by the quasi- and extra-legal factors under observation in this research.

The nature of the dependent variable inherently relies on the non-random subset of the total sample who report having received a formal misconduct ticket that resulted in them going through the inmate disciplinary process. This dependence of the dependent variable on selection into the inmate disciplinary process creates a situation where there is a potential for sample selection bias to be introduced into the models (Berk, 1983; Berk & Ray, 1992). Various strategies exist to account for sample selection, and employing the strategy most appropriate for the type of dependence and analyses to be run allows the researcher to be assured that the opportunity for sample selection bias has been minimized (Beck, 1983; Bushway, Johnson, & Slocum, 2007).

The problem of sample selection can also be viewed as a form of missing data (Berk, 1983). Since the presence of a response to the dependent variable necessitates that an inmate has received a formal misconduct ticket that resulted in their going through the disciplinary process, those inmates who have not received a formal misconduct ticket during the current period of observation will have missing data on the variable/s under observation. Statistical methods to account for sample selection bias can, then, be considered to correct for this unique form of missing data.

The Heckman two-step correction is one of the statistical procedures most commonly used to correct for implicit (as opposed to random/explicit) sample selection

bias (Bushway et al., 2007). Statistically, Heckman's two-step procedure corrects for sample selection by correcting for the influence of the hazard of selection on the dependent variable (citation). As outlined by Heckman (1976; see also, Berk, 1983; Bushway et al., 2007), this approach involves three steps. First, a probit model for selection is estimated. In this probit model, selection into the substantive dependent variable is coded as "1". From this probit model for selection, the second step occurs when the Inverse Mills Ratio (IMR) is calculated. Finally, this correction factor, the IMR, is then inserted into the model of interest predicting the dependent variable.

Heckman's two-step procedure has been used for analyses on various criminal justice decision points, including police arrests (D'Alessio & Stolzenberg, 2003), bail amounts (Demuth, 2003), and sentencing outcomes (e.g., Nobling, Spohn, & Delone, 1998; Steffensemeier & Demuth, 2001; Ulmer & Johnson, 2004), as well as when examining outcomes across multiple stages of the criminal justice process (e.g., Kingsnorth et al., 2008; Leiber & Mack, 2003; Spohn & Horney, 1996; Wooldredge & Thistelwaite, 2004). Most relevant to the current study, Hagan and colleagues conducted multiple analyses that demonstrated the prominence of selection effects in sentencing research (e.g., Hagan & Palloni, 1986; Hagan & Parker, 1985; Peterson & Hagan, 1984; Zatz & Hagan, 1985). Once again following the lead of similar sentencing research, the current analyses employ the Heckman correction method to minimize the potential for sample selection bias.

There are, however, some criticisms of the Heckman method that should be recognized (Bushway et al., 2007). Maddala (1985) argued that the Heckman correction is dependent on a specific structural form of missing data, so the results derived from

analyses using the Heckman method are sensitive to distribution assumptions. After a comprehensive analysis of over 25 criminal justice studies that employ the Heckman method, Bushway and colleagues (2007) concluded that there are some important problems with the way the Heckman correction has been applied in a good deal of studies. Errors identified include: use of a logit rather than probit model at the first stage, failure to correct heteroskedastic errors, improper calculation of the Inverse Mills Ratio, and use of models other than OLS in the second stage (Bushway et al., 2007). Other research evidence suggests that, at times, the Heckman correction can inflate standard errors in the second stage model due to collinearity between the selection variable and the dependent variable (Moffit, 199; Puhani, 2000; Stolzenberg & Relles, 1990).

The current analysis addresses all these potential problems that threaten the efficacy of the Heckman correction method. For example, Stata 14 includes built-in procedures for running the Heckman two-step procedure with many types of regression analyses. The first stage model predicting selection is a probit model in all of Stata's Heckman procedures. The Stata Heckman command calculates the IMR in the process of completing the analyses, all but eliminating the risk of miscalculating the correction factor. Due to the nested nature of all institutional data where inmates (level one) are housed within facilities (level two), it is necessary to use cluster robust standard errors, which helps to address any potential heteroscedasticity among errors terms in the analyses.

Finally, in order to address the issue of inflated standard errors, exclusion restrictions are included into the selection model (the first stage of the two-step method). Exclusion restrictions are variables that influence the selection process but not the

substantive relationship between the independent and dependent variables (Bushway et al., 2007). Statistically, exclusion restriction variables are significantly associated with the selection variable, but not with the dependent variable of interest. Exclusion restrictions help to reduce the correlation between the selection variable and the dependent variable, acting to further strengthen the bias-minimizing effect of the Heckman correction method (Bushway et al., 2007). Five variables are included as exclusion restrictions in all Heckman models run in the current dissertation. Due to the lack of independence between the dependent and selection variables, the vast majority of the independent variables under observation are statistically associated with both the selection and dependent variables. Prior to selecting the exclusion restrictions employed here, the author conducted a literature review to identify a set of variables that have been used in prior research that looks at formal inmate misconduct (the selection variable) but might not be associated with the dependent variable of punishment option following disciplinary proceeding. Of this group of variables five variables emerged as strong exclusion restrictions. As is discussed below in the section on Operationalization and Measurement, exclusion restrictions include a mental health scale, a scale measuring negative affect, a categorical suicidal thoughts/attempts indicator, having a GED/high school diploma, and being married.

Limitations of the Data

While the data used for this research are ideal for addressing the questions under observation, there are some limitations of the dataset itself that must be acknowledged. Most importantly, all of the data are inmate self-report data. This means that both the dependent variable (disciplinary punishment outcome) and some of the key independent

variables, for example instant misconduct offense and prior misconduct history, are self-reported with no official records to verify the accuracy of the data. Prior research, however, has compared the validity of self-report and official data and generally concludes that both are valid measures of offending (Hindelang, Hirschi, & Weiss, 1981; Kirk, 2006; Thornberry & Krohn, 2000) and inmate misconduct specifically (Simon, 1993; Steiner & Wooldredge, 2014; Van Voorhis, 1994). Prior research comparing the same series (SISFCF) of data to official or administrative data has demonstrated that inmate self-report data is a valid and reliable measure of inmate behavior while incarcerated (Daggett & Camp, 2009).

As is the case with all secondary data sources that were not designed to collect data to address the exact research questions for which they are used, there are a couple of important variables that should be included that are omitted by necessity. Most prominent of these would be an indicator of membership in a prison gang. Similarly, the data contain no level-two variables that indicate differences in prison environmental characteristics across facilities that could impact the punishment outcome received within and between institutions. Beyond not being able to include any fixed or random-effects measures at level two, the sampling strategy and sampling weight correction provided do not allow for the aggregation of level-one data to level two clustered by the facility indicator. This is due to the sampling strategy which did not call for a random selection (and therefore generalizable sample) of inmates within sampled facilities and lack of information regarding how representative the inmate sample is for each facility, which introduces some degree of unmeasurable bias into the prospect of using aggregated level-one data to proxy information at level two.

Also representing a limitation of the data, the selection variable suffers from double barreled language (Fowler, 1995), in that in one single question the item asks whether an inmate "received an official write-up for and/or was found guilty of" each type of misconduct. In an ideal situation it would be possible to separate those cases which were found guilty of misconduct at the disciplinary proceeding versus those who received a formal write-up but either did not advance through the disciplinary process or were found guilty. However, as mentioned in the Chapter 1, anecdotal evidence suggests that misconduct tickets that make it to a formal disciplinary hearing are nearly universally upheld (e.g., Freeman, 2003; Jackson, 1974).

Finally, due to the way the questionnaire was written, there is no anchor present in the items on formal misconduct or those on disciplinary action to determine that those events occurred within the facility that the inmate resided in at the time of the interview. While the language of the interview items do, in fact, specify that responses should be anchored in a time period that started at the most recent admission (meaning the current prison term only), it is possible that some inmates experienced transfer between the formal misconduct and disciplinary events they report and the time they were interviewed for the 2004 SISFCF. This mismatch could lead to the prison environment characteristics captured in the facility identification number to be incorrectly applied in the case of such movement. The data contain no way by which to estimate the extent to which this potential limitation may actually be true, but we can be reasonably comfortable that likelihood of this is limited due to use of the "most recent" formal misconduct/disciplinary proceeding and consequent punishment outcome in the current analyses.

Operationalization and Measurement

The research questions address the effect of various inmate-level characteristics on choice of punishment outcome. The dependent variable in the estimation models of interest, then, is related to the punishment outcome received. As described below, the dependent variable is operationalized in two different ways. The key independent variables are all measured at the inmate level and are divided into three groups – legal factors, quasi-legal factors, and extra-legal factors. There also are a variety of variables included as statistical controls. Descriptive univariate statistics for all variables are included in Table 2 and described below, while bivariate correlations can be found in Table 3. Following the description of all variables included in the estimation models, this section will conclude with a brief overview of the selection variable and exclusion restrictions used in the sample selection model.

Dependent Variable: Punishment Outcome Following Disciplinary Proceeding

The dependent variable under observation in this research is the *punishment outcome*, or institutional disciplinary response, following a guilty misconduct finding during the inmate disciplinary process. Of the 8,300 state and federal inmates who self-report receiving a formal misconduct ticket leading to a disciplinary hearing, data on the punishment outcome variables were available for 7,496 inmates (90.3%). After handling missing data, these roughly 7,500 inmates include those for which there are complete data in the subsample of interest.

Among the significant contributions to the literature base made by this study is that it is the first methodologically rigorous empirical examination of the outcome of the prison disciplinary process operationalized as a continuum of sanctions that objectively

vary in severity from lesser to more severe. Due to the extremely limited number of empirical studies in this area, the author is aware of no prior research that has operationalized the dependent variable in this way (for an exception focused on disciplinary segregation, see Clark, 2018). Instead, prior research has focused simply on the presence or absence of one or two specific punishment outcomes following the inmate disciplinary process, such as placement in disciplinary segregation (e.g., Butler & Steiner, 2016) and removal of accumulated good time (e.g., Steiner & Cain, 2017).

The survey instrument asked inmates, "What disciplinary action took place for the (rules violation)",[12] a closed-ended question referencing eleven potential disciplinary or punishment outcomes.[13],[14] These include: received no (or suspended punishment), received formal reprimand, loss of privileges, loss or change of work assignment, given extra work, received a new sentence, loss of good time, transfer to another facility, higher custody level within facility, confinement to cell, and solitary confinement or segregation. These potential punishment outcomes vary in severity based on further restrictions that they place on the inmate (from no change, to limitations on work, programming, and privileges, through increased restrictions on freedom of movement and finally complete segregation within the prison facility). The eleven individual disciplinary outcomes were grouped into an ordered categorical scale with five different categories that reflect increasing punishment severity[15]. Therefore, the place in which

[12] See prior section for discussion of institutional misconduct variable.
[13] The option for "other punishment" (n=721) was removed due to lack of specificity and to ensure consistency of operationalization.
[14] The punishment outcome questions specified that the time-anchor is the current period of incarceration.
[15] In situations where an inmate received multiple punishment options for their most recent disciplinary hearing (mean = 1.5 punishment categories), the most severe punishment outcome was coded for the dependent variable.

each punishment outcome falls on this scale reflects a greater or lesser severity of punishment in the form of further restrictions on inmate movement or personal liberties/freedom(s) within the institutional setting.

Table 2. Descriptive Statistics: Univariate Characteristics, All Variables in Estimation Model

	Full Sample n=18,185			**Selection Variable Subsample** n=8,300		
	Mean (#)	SD (%)	Range	Mean (#)	SD (%)	Range
Dependent Variables						
DV1: Sanction Severity Scale	--	--	--	3.38	1.24	1-5
DV2: Punishment Category						
No punishment [1]	--	--	--	(303)	(4.47)	
Modification of privileges [2]	--	--	--	(1,991)	(29.39)	
Custody modification – internal [3]	--	--	--	(823)	(12.15)	
Custody modification – external or solitary [4]	--	--	--	(2,132)	(31.47)	
Modification of sentence [5]	--	--	--	(1,526)	(22.52)	
Independent Variables						
Legal Factors						
Instant Misconduct Offense						
Disruptive behavior	--	--	--	(1,913)	(23.13)	
Security/order violation	--	--	--	(563)	(6.76)	
Drug/alcohol	--	--	--	(569)	(6.84)	
Property/contraband	--	--	--	(1,668)	(20.08)	
Assault: inmate	--	--	--	(1,856)	(22.35)	
Assault: staff	--	--	--	(1,731)	(20.84)	
Prior misconduct history	--	--	--	2.05	1.77	0-12
Quasi-legal Factors						
Offense of Conviction[b]						
Drug	(10,297)	(57.39)		(5,158)	(62.81)	
Property/financial	(3,639)	(20.28)		(1,472)	(17.92)	
Public order/misdemeanor	(163)	(<1.00)		(65)	(<1.00)	
Person offense	(2,152)	(11.99)		(1,020)	(12.42)	
Other	(1,691)	(9.42)		(497)	(6.05)	
Prison job	(12,767)	(71.38)		(5,907)	(71.20)	
Program participation[a]	(10,510)	(58.96)		(5,652)	(68.24)	
Time served in months	46.41	59.47	0-515.05	65.11	67.98	0-494.17
Natural log of time served (used for analysis) [a]	3.05	1.39	0-7.09	3.60	1.20	0-6.24

Prior incarceration[a]	(6,626)	(47.45)		(3,289)	(52.20)	
Extra-legal Factors						
Male[a]	(14,297)	(78.62)		(6,812)	(82.07)	
Race[b]						
White, non-Hispanic	(6,362)	(35.04)		(2,858)	(34.49)	
Black, non-Hispanic	(7,240)	(39.87)		(3,591)	(43.34)	
Hispanic	(3,428)	(18.93)		(1,305)	(15.75)	
Other	(1,117)	(6.15)		(532)	(6.42)	
Control Variables						
Facility	--	--	--	--	--	--
Federal	(3,686)	(20.27)		(1,083)	(13.05)	
Age	35.83	10.51	16-84	34.65	10.21	16-84
Log of age (used for analysis)	3.54	0.29	2.77-4.23	3.50	0.29	2.77-4.43

NOTE: Values are mean and standard deviation, with frequency and percentages in parentheses

[a] $Pr(T<t) \leq .05$ Difference in means significant; group membership = selection variable subsample

[b] $Pr(\chi^2) \leq .05$ Difference in means significant; group membership = selection variable subsample

Table 3. Descriptive Statistics: Summary Bivariate Correlation Matrix (see variable list on next page, continuation of Table 3)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	--																								
2	.11	--																							
3	.14	-.28	--																						
4	-.08	-.26	-.27	--																					
5	.10	.14	-.15	-.14	--																				
6	-.17	-.28	-.29	.27	.15	--																			
7	-.12	-.14	-.14	-.14	-.07	-.15	--																		
8	.12	.53	.08	-.12	-.11	-.30	-.18	--																	
9				-.02			.03		--																
10		.03	.04			-.06	-.04	.07	.43	--															
11			-.04			.05		-.05	-.19	-.59	--														
12	.03								-.04	-.11	-.05	--													
13		-.03	-.03					-.08	-.12	-.37	-.16	-.03	--												
14	-.09	-.11	-.04	.06	.04	.05	.04	-.12		.04	-.03		-.02	--											
15				.04		-.06		.10	.02	.07	-.04		-.08	.14	--										
16	.10	.14	.07		.06	-.18	-.11	.31	-.03	.23	-.14	-.03	-.15	.18	.27	--									
17	.06	.04				-.04		.04	.03	-.08	.05		.05	-.07	-.02		--								
18	.07	.06			.07	-.07		.07	.06	.06	-.12		-.02	-.04	-.04	.19	.12	--							
19	-.03	-.04	-.07	.09			.04	-.04	-.03	-.08	.11	.04			-.03	-.05	-.04	-.06	--						
20		.07	.02	-.10			-.04	.04	.02	.10	-.06	-.03	-.10	.03	.03	.08	.08	.06	-.60	--					
21		-.03	.05								-.05		.09	-.05		-.04	-.05	.02	-.35	-.39	--				
22									.02	-.02	-.02		.03		.02			-.03	-.19	-.21	-.12	--			
23	.04	-.06			.07		.05	-.11	.02	-.07	.03	-.02	.07	.14	.04	-.02	-.06	-.12	-.05	-.09	.15	.03	--		
24	.08	-.03			.09	-.05	.06	-.10	.03	-.02	-.03	-.04	.06	.21	.11	.04	.10	-.06	-.06		.07	.02	.68	--	
25		-.06	-.06	.07	.05		.05	-.09	-.07	.03		.02	.03	.09	-.05	.23	-.02	-.02	.12	-.06	-.07		.08	.09	--

NOTE:

* p≤.05, blank = non-significant

See next page for numbered variable list

Table 3. continued, Variable list	
1	Dependent Variable
2	Most serious misconduct – Assault: staff
3	Most serious misconduct – Assault: inmate
4	Most serious misconduct – Property/contraband
5	Most serious misconduct – Drug/alcohol
6	Most serious misconduct – Disruptive behavior
7	Most serious misconduct – Violations of security/order
8	Prior misconduct history
9	Offense of incarceration – Person
10	Offense of incarceration – Drug
11	Offense of incarceration – Property/financial
12	Offense of incarceration – Public order/misdemeanor
13	Offense of incarceration – Other
14	Prison job
15	Program participation
16	Time served
17	Prior incarceration
18	Male
19	Race – White (non-Hispanic)
20	Race – Black (non-Hispanic)
21	Race – Hispanic
22	Race – Other
23	Facility
24	Federal
25	Age

As shown in Table 4, categories include: no punishment (coded 1 – includes: received no [or suspended] punishment, received formal reprimand), modification of privileges (coded 2 – includes: given extra work, loss/change of work assignment, loss of privileges), upwards custody modification – internal to current facility (coded 3 – includes: confinement to own cell/quarters), upwards custody modification – solitary or external to current facility (coded 4 – includes: solitary confinement or segregation [current facility], transfer to higher custody level within facility, transfer to another facility), and modification of original sentence/time added to original sentence (coded 5 includes: loss of good time, received a new sentence). Table 4 presents the punishment outcome scale that is used as an ordered categorical dependent variable in the analyses.

Table 4. Descriptive Statistics and Coding, Dependent Variable: Sanction Severity Scale [a,b,c]

Original SISFCF Categorization – Punishment Outcome	Recoding – Punishment Outcome Category	Level of Severity	Total N (%) per Level of Severity[d]
Received no (or suspended) punishment *(n=143)*[e] Received formal reprimand *(n=251)*	No punishment	**1**	**303 (4.5%)**
Given extra work *(n=708)* Loss/change of work assignment *(n=347)* Loss of privileges *(n=2933)*	Modification of privileges	**2**	**1991 (29.4%)**
Confinement to own cell/quarters *(n=1190)*	Custody modification –internal to facility	**3**	**823 (12.1%)**
Solitary confinement or segregation (current facility) *(n=2578)* Transfer to higher custody level within facility *(n=401)* Transfer to another facility (higher custody) *(n=213)*	Custody modification – solitary confinement or external transfer	**4**	**2132 (31.5%)**
Loss of good time *(n=1482)* Received a new sentence *(n=68)*	Modification of original sentence	**5**	**1526 (22.5%)**
Total number of punishment decisions *(n=10314)*			**6775**

Notes:
[a] Punishment outcomes range in severity from (1) lowest severity to (5) highest severity
[b] Ordered categorical operationalization of variable
[c] "Other punishment option" category (n= 721, 8.7%) removed; missing = 804 (9.7%)
[d] Most severe coded if received multiple punishment outcomes
[e] Individual punishment options total (n=10314) exceeds 6775 as the categories are not mutually exclusive (can have more than one punishment option); Sanction Severity Scale includes only the most severe punishment option

This ordered categorical is scale is incorporated into the present analyses in two ways. First, referring to the dependent variable as the *Sanction Severity Scale*, it is treated

as an ordered interval-level numeric scale ranging 1-5. By way of descriptive statistics, when looking at the outcome variable in this form, the mean value on the Sanction Severity Scale is 3.38 with a standard deviation of 1.24. In other analyses, the dependent variable of punishment option takes the form of an ordered categorical variable (*punishment category*), where we are interested in the relationship between the predictor variables and each category of the dependent variable in comparison to the reference (category 1) of receiving no formal punishment. As is shown on Table 4, fewer than five percent (4.47%, n=303) of the disciplinary hearing subsample received no formal punishment, roughly thirty percent (29.39%, n=1,991) received a modification of privileges, just over twelve percent (12.15%, n=823) received a custody modification internal to the current facility while over thirty percent (31.47%, n=2,132) received a custody modification external to the facility or that resulted in segregation, and, finally, nearly twenty three percent (22.52%, n=1,526) received a modification (increase) of their original sentence.

Independent Variables: Legal, Quasi-legal, and Extra-legal Factors

Legal factors. Modeled after research within the field of criminal court sentencing and the very few studies on the decision point of interest from which the current study builds, two inmate-level variables make up the category of legal factors examined in the current analyses. These include the type of misconduct/rules violation for which the guilty finding was received (*most serious misconduct offense*) and *prior misconduct history* since admission during the current term of incarceration. The survey instrument includes a series of questions with the text "Since your admission, have you been written up or found guilty of a/an _____ violation?", with one item for each of

fourteen varieties of misconduct (see Table 5). For analysis, the series of variables from the survey was recoded into categories and then transformed into a series of mutually exclusive dichotomous indicators to facilitate identification of the most serious form of misconduct charged at most recent disciplinary proceeding.

Table 5 contains information on the coding scheme for instant misconduct offense variable (*most serious misconduct offense*), which includes six categories. While treated as and considered a nominal variable representing categories of misconduct, the most serious misconduct type is indicated in the variable used in analyses (i.e., *most serious misconduct offense* is a nominal/categorical, not ordered categorical, variable). Final categories include disruptive behavior (reference category; 23.13%, n=1,913), violation of security/order related rules (n=563, 6.76%), drug/alcohol misconduct (n=569, 6.84%), property/contraband offenses (n=1,668, 20.08%), assault of another inmate (n=1,856, 22.35%), and assault perpetrated against a staff member (n=1,731, 20.84%).

Prior misconduct history is a variety score that ranges from 0-12 (mean = 2.05, standard deviation = 1.77), indicating the categories of misconduct that the inmate has previously received a formal misconduct ticket for during their current period of incarceration. Due to the nature of the item asked on the SISFCF, any formal misconduct and consequent disciplinary proceedings that occurred in a prior term of incarceration are excluded from the analysis. The value of the *prior misconduct history* variety score, then, is a count of the types of misconduct violations inmates have been found guilty of since their most recent admission (not including the most recent infraction that resulted in the

Table 5. Descriptive Statistics and Coding, Instant Misconduct Offense Variable [a]				Most Serious Misconduct Offense
(n[b])	**Original Outcome and Wording from SISFCF**	**Re-code for Current Study**	**n (%)[d]**	**N(%)**
(1496)	Any minor violations relating to facility orderliness and operation, such as abusive language, horseplay, failing to follow sanitary regulations, etc.	**Violation of institutional rules – disruptive behavior [c]**	1,496 (8.9%)	**1913 (23.13%)**
(514)	Any other major violation, including work slowdowns, food strikes, setting fires, rioting, etc.	**Violation of institutional rules – security/order related**	6,636 (39.3%)	**563 (6.76%)**
(2,378) (3,744) (923)	Being out of place Disobeying orders Drug violation, such as possession, use or dealing in drugs	**Drug/alcohol**	1,346 (8.0%)	**569 (6.84%)**
(423) (528) (188) (2,104)	Alcohol violation, including unauthorized possession, use or sale Possession of weapon Possession of stolen property Possession of any other unauthorized item	**Property/contraband**	2,820 (16.7%)	**1668 (20.08%)**
(798) (2,037)	Verbal assault of another inmate Physical assault on another inmate	**Assault of Inmate**	2,835 (16.8%)	**1856 (22.35%)**
(1,291) (422)	Verbal assault on a CO/other staff member Physical assault on a CO/other staff member	**Assault of Institutional Personnel/Corrections Officer**	1,733 (10.3%)	**1731 (20.84%)**
	Total	**16,866**		**8300**

Notes:
[a] Categorical operationalization of variable
[b] Individual misconduct categories total (n=16866) exceeds 8300 as the categories are not mutually exclusive (can have more than one misconduct offense per disciplinary hearing; mean 2.03); if multiple indicated in the data, the most serious is included in the Most Serious Misconduct Offense column
[c] Reference category = disruptive behavior
[d] Figures represent the percentage of total punishments given (out of 16,866) that fall within each category

most recent disciplinary hearing and the observed punishment/dependent variable). For example, if an inmate reported that he or she had previously received a misconduct ticket for two of the categories of misconduct offense, that inmate was assigned a value of two on the *prior misconduct history* variety scale. While it is true that use of a variety score leads to the potential of ignoring important variability in the frequency of each type of

infraction, thus potentially skewing the true nature of prior misconduct history from that which is observed, prior research indicates that offense variety, frequency, and seriousness are commonly interrelated (Sweeten, 2012). As such, the variety scale operationalization of prior misconduct history was employed.

Quasi-legal factors. Various criminal history variables are used in the current study as an indicator of perceived criminognic risk. Prior research in this area has considered these variables to be extra-legal factors (e.g., Butler & Steiner, 2016), however, they are instead considered here to be quasi-legal. Within the general sentencing literature, information on criminal history and offender risk level is not only considered in the sentencing process, but is, at times, incorporated into formal sentencing guidelines (Stith & Cabranes, 1998)[16]. Hence, the literature suggests that variables related to risk level and criminal history should be considered quasi-legal as this is, in a way, a study of the sentencing process within prisons. Pre-prison criminal history is measured by two variables. The first is a categorical variable indicating *offense for current incarceration*[17] (person [12.42%], property/financial [17.92], drug [62.81%]– reference, public order offense [<1%], and other [6.05%]). The second variable representing criminal history is a dichotomous indicator representing *prior incarceration* (yes/no), with over half of the subsample (52.2%) reporting that this is not their first time in prison.

Additionally, an early review of the inmate disciplinary processes in 42 American correctional systems suggests that some form of an inmate "jacket" containing, at a minimum, information on prior misconduct/disciplinary proceedings during the current

[16] This is especially true in prisons, where the risk of misconduct in primary to level of security.
[17] Figures for all variables described in the quasi-legal and extra-legal factors sections are for the inmates included in the formal misconduct subsample only, see Table A1 for comparison to full SISFCF sample.

incarceration and prior incarceration history will be available for disciplinary committee personnel to reference during the disciplinary proceedings (Babcock, 1981, p.1041). Consistent with this conceptualization, variables indicating an inmates' level of institutional adjustment and involvement in pro-social activities within the prison setting are also categorized as quasi-legal factors. Having a *prison job* (yes/no) and *participation in (non-recreational) programming* (yes/no) are included in the models as indicators of institutional adjustment and involvement in conventional activities within a prison-specific context, with over seventy percent (71.2%) of inmates holding a prison job at time of interview and over two thirds (68.24%) having either previous or current involvement in some variety of non-recreational/non-religious programming within the institution. Finally, the duration of time incarcerated is represented by the natural log of *time served* as captured in months between the date of admission and interview date.

Extra-legal factors. Two inmate demographic variables, *gender* and *race/ethnicity*, represent important extra-legal factors. Beyond their hypothesized direct effects, these extra-legal factors are also hypothesized to interact with the legal factors to condition the effect of the legal factors on choice of disciplinary punishment outcome. The gender variable is represented as a value of one if the subject is *male*, and zero if female, with over eighty percent of inmates being male. *Race/ethnicity* is operationalized as a categorical variable including White – non-Hispanic (reference, 34.5%), Black – non-Hispanic (43.34%), Hispanic (15.75%), and Other (6.42%).

Control Variables

Three variables are included in the models as statistical controls. First, there is a dichotomous indicator of whether the inmate in incarcerated within a federal (*Federal*=1) or state facility. Second, there is a fixed-effect *facility* indicator that is used to identify all inmates who are housed within the same institution. This facility indicator variable is included for both substantive and methodological reasons. The inclusion of a fixed effect for the facility allows for the incorporation of all the unmeasured characteristics associated with the prison environment that could influence the dependent variable to be accounted for in the estimation of the relationship between the legal, quasi-legal, and extra-legal factors and punishment outcome. Such variables could include, for example, factors such as: institutional culture, administrative practices, disciplinary practices, staff-inmate relationships, aggregated inmate characteristics and risk profiles, and aggregated inmate misconduct trends. In an ideal situation, data would be available to include the larger prison environmental factors into quantitative models by incorporating random-effect variables at level two, but this is not possible given the specifics of the current data. It is also important to recognize that the prison environment characteristics will have a stronger relationship within the facility than between facilities, which would result in inappropriately correlated error terms among inmates within the same facilities biasing the standard errors and all statistics associated with them (such as significance levels of multivariate relationships). Incorporating a facility indicator into the models allows for the identification of that variable as a means by which to group (or cluster) cases to adjust for the biased estimation of standard errors.

Inmate *age* is the final control variable. Due to limitations in the data, age can only be calculated at the time of interview not at the time of disciplinary proceeding. Since there is no measure of how recent the "most recent" disciplinary event was, it is not possible to determine the age at which the disciplinary proceeding and consequent punishment decision took place, therefore limiting our ability to include age as a theoretically-informed extra-legal factor. Age at time of interview ranged from 16 to 84, with a mean of 34.65 and a standard deviation of 10.21. Inmate age in years was transformed by its natural log to normalize the distribution before inclusion into the models.

Selection Variable

As discussed in prior sections, due to the nature of the research questions this study inherently relies on subsample of all inmates represented in the full dataset who have received a guilty disciplinary finding for some form of inmate misconduct following the inmate disciplinary process. Represented in the numbers associated with the SISFCF data, of the 18,185 inmates who agreed to participate in the study, over 46% (n=8,300) self-reported that they received a guilty finding following a misconduct disciplinary hearing.

However, not all inmate misconduct is detected, and even among that which is detected by correctional officers, not all detected inmate misconduct is handled through the institutional disciplinary process which starts with the writing of a formal misconduct ticket. Therefore, it is likely that the group of inmates that is formally written up and processed through the institutional disciplinary process is qualitatively and quantitatively *different* than those inmates who engage in misconduct but are not formally processed

through the disciplinary system. Building on that assumption, it is also likely that those differences might also influence the choice of punishment outcome following the misconduct disciplinary proceeding. This sort of situation is a case of implicit selection (Berk & Ray, 1982; Bushway, Johnson, & Slocum, 2007) which has the potential to introduce harmful selection bias into the results, making it necessary to correct for this potential bias by running some form of a sample selection model (Berk, 1983; Berk & Ray, 1982; Bushway et al., 2007). Specifics of the selection models employed in the analyses will be discussed below in the Analytic Strategy section, but the variables included in the group of exclusion restrictions are introduced below.

Exclusion Restrictions

In order to produce a good estimate of the hazard for selection to correct for the potential sample selection bias, exclusion restrictions (sometimes called auxiliary or instrument variables) must be strongly associated with the selection variable but not associated with the outcome variable (Berk, 1983). Following extensive review of prior literature on correlates and predictors of officially sanctioned inmate misconduct, a group of five exclusionary variables was identified. These five variables are all associated with selection (or receiving a formal inmate misconduct ticket that resulted in a guilty disciplinary proceeding), but are not statistically related to punishment outcome following disciplinary proceeding as it is currently operationalized. These five exclusion restrictions include a self-report *mental health scale* (range 0-4), a dichotomous indicator of *negative affect*, a *suicidal* thought and behavior indicator (range 0-2), and indicators for inmate education level (received *high school diploma or GED*) and marital status

(*married*=1). Descriptive statistics of the exclusion restriction variables are shown on Table 6.

Table 6. Descriptive Statistics: Exclusion Restrictions

	N (%)	Range
Mental health scale		0-4
0	5,181 (62.72)	
1	1,089 (13.18)	
2	1,027 (12.43)	
3	814 (9.85)	
4	150 (1.82)	
Negative affect	3,726 (45.01)	0-1
Suicide		0-2
Neither	5,951 (71.82)	
Only thought about it	926 (11.18)	
Prior attempt	1,409 (17.0)	
GED or HS diploma	5,541 (66.93)	0-1
Married	1,196 (14.42)	0-1

Analytic Strategy

All data maintenance and analyses are conducted in Stata14 (StataCorp, 2015). Following an initial investigation into the structure and nature of the data, a series of recodes and variable transformations were undertaken in order to prepare the data for analysis (see prior section, Operationalization and Measurement). Before running the bivariate and later multivariate models, the weights (related to the inverse of an inmates' probability of inclusion into the sample) supplied on the restricted access SISFCF dataset were applied to the data to correct for the complex, multi-stage sampling design. Bivariate relationships between the variables of interest – the legal, quasi-legal, and extra-legal factors – and punishment outcome were then confirmed and are presented in

table 3. A variance inflation test[18] (VIF) was conducted, and none of the VIF's reached the critical threshold value of four, in fact none were over 2.29 with a mean VIF of 1.40, indicating that multicollinearity is not a problem (see Table 7).

Table 7. Variance Inflation Factors – All Variables (estimation and sample selection models)

Variable	VIF	1/VIF
Legal Factors		
Most serious instant misconduct offense[a]		
Security/order violation	1.19	0.838
Drug/alcohol	1.26	0.791
Property/contraband	1.56	0.639
Assault: inmate	1.75	0.573
Assault: staff	2.25	0.445
Prior misconduct Hx	1.78	0.561
Quasi-legal Factors		
Offense of conviction[b]		
Drug	2.29	0.437
Property/financial	2.05	0.487
Public order/misdemeanor	1.06	0.945
Other	1.41	0.707
Prison job	1.11	0.901
Program participation	1.09	0.914
Time served	1.62	0.618
Prior incarceration	1.06	0.941
Extra-legal Factors		
Male	1.19	0.838
Race[c]		
Black	1.53	0.655
Hispanic	1.41	0.712
Other	1.13	0.886
Controls		
Facility	1.67	0.599
Federal	1.72	0.582
Age	1.34	0.744
Exclusion Restrictions		
Mental health scale		
1	1.12	0.892
2	1.23	0.811
3	1.31	0.761
4	1.11	0.902
Negative affect	1.13	0.887
Suicide		

[18] The VIF multicollinearity test involves treating the categorical variable dependent variable ranging 1-5 as continuous, running an ordered linear regression (OLS) with all predictors from both the estimation and selection models and asking Stata14 to calculate the VIF's with the command "vif" after specifying the OLS regression equation.

Only thought about it	1.10	0.907
Prior attempt	1.41	0.711
GED or HS diploma	1.11	0.904
Married	1.03	0.967
Mean VIF	1.40	

Prior to beginning the analyses for the research questions under observation, a series of preliminary models was run in order to verify the strength of the exclusion restrictions and the overall selection model to ensure that it could provide an appropriate correction for the incidental selection inherent in both the research questions and the data file. The hallmark of good exclusion restrictions is that they are statistically associated with the selection variable but not the dependent variables. The statistically significant relationships between the exclusion restrictions and the selection variable and simultaneous non-significant relationships between the same exclusions restrictions and the dependent variable are demonstrated through bivariate correlations (Table 8) and a series of regression analyses (Tables 9-11). Table 9 contains the results of a probit model which show that all exclusion restrictions are significantly associated with selection. Table 10 contains the results of an ordered probit model (for the dependent variable operationalized as Sanction Severity Scale) and Table 11 shows findings from a multinomial logistic regression model (for the dependent variable operationalized as punishment category). Together the results of these three tables demonstrate that, while associated with the selection variable, the exclusion restrictions are not significant predictors of either operationalization of the dependent variable, verifying the strength of the selection model.

Table 8. Bivariate Correlation Matrix – Exclusion Restriction, Selection Variable, Sanction Severity Scale Dependent Variable

		1	2	3	4	5	6	7
1	**Mental Health Scale**	--						
2	**Negative Affect**	.20***	--					
3	**Suicide**	.53***	.19***	--				
4	**GED/HS**	.03***	-.02**	.02**	--			
5	**Married**	-.03***	-.04***	-.03***	.02*	--		
6	**Selection Variable**	.30***	.34***	.20***	.03***	-.10***	--	
7	**Dependent Variable**	.02	.04	-.02	-.02	-.02	.01	--

NOTE:
*** p ≤.001, ** p≤.01, * p≤.05

Table 9. Probit Model – Exclusion Restrictions Predicting Selection Variable with cluster robust standard errors (326 clusters)

	Coef	SE	z
Controls			
Facility	-.000	.000	-1.38
Federal	-.389	.098	-3.97***
Current age	-.009	.001	-6.51***
Exclusion Restrictions			
Mental health scale			
1	.120	.035	3.48***
2	.104	.037	2.83**
3	.166	.041	4.02***
4	.062	.081	0.77
Negative affect	.269	.021	12.94***
Suicide			
Only thought about it	.135	.033	4.03***
Prior attempt	.141	.033	4.32***
GED or HS diploma	.143	.021	6.78***
Married	-.234	.0257	-9.12***
Constant	.225	.101	2.23*
Psuedo R^2		.0468	
Wald χ^2		581.09***	
Psuedo Loglikelihood		-11584.553	

NOTE:
*** p ≤.001, ** p≤.01, * p≤.05

As discussed in Chapter 2, the goal of the current research is to investigate the direct and interactive effects of various inmate-level characteristics on the punishment outcome following institutional disciplinary proceedings. The two operationalizations of the punishment outcome dependent variable each require different modeling strategies. When looking at punishment outcome in the form of the numeric sanction severity scale ranging 1-5, multivariate ordered probit models will be used (Long, 1997). When observing the unique effect of the inmate characteristics on each category of punishment option (punishment categories), the most ideal models to employ will be multinomial logistic regression models (Long, 1997). All analyses will address two specific research questions –

Research Question 1. What is the nature of the relationship between various inmate characteristics – categorized into groups of legal, quasi-legal, and extra-legal factors – and punishment outcome?

Research Question 2. Beyond the significant direct effects, do the extra-legal factors condition the effect of the legal and quasi-legal factors on punishment outcome?

A series of multivariate models were estimated to address the direct effects of the various inmate characteristics on punishment outcome as called for in the first research question (see Chapter 4)[19]. First, in an exploratory fashion, the appropriate preliminary

[19] Coefficients presented in all tables are standardized coefficients to allow for comparison across variables within the multivariate models.

models were run on the selection variable subsample (n=8,300) for both operationalizations of the dependent variable in order to provide some initial insight into the nature of the relationships between the various inmate-level characteristics and punishment outcome. These initial findings of various significant direct effects were then

Table 10. Ordered Probit Model – Exclusion Restrictions Predicting Sanction Severity Scale with cluster robust standard errors (326 clusters)

	Coef	SE	z
Controls			
Facility	.000	.000	0.69
Federal	.241	.092	2.62**
Current age	-.001	.001	-0.57
Exclusion Restrictions			
Mental health scale			
1	.085	.042	2.02*
2	.089	.044	2.04
3	.051	.050	1.02
4	.066	.095	0.69
Negative affect	.069	.029	2.36*
Suicide			
Only thought about it	-.018	.042	-0.42
Prior attempt	-.053	.043	-1.22
GED or HS diploma	-.050	.029	-1.74
Married	-.055	.039	-1.42
Cut 1	-1.629	.107	
Cut 2	-.344	.097	
Cut 3	-.027	.099	
Cut 4	.832	.100	
Psuedo R^2		.0038	
Wald χ^2		45.99***	
Psuedo Loglikelihood		-9725.2022	

NOTE:
*** p ≤.001, ** p≤.01, * p≤.05

confirmed with the use of multiple types of two-part models to account for sample selection. Multivariate models to address both hypothesis one and two are conducted on both the sanction severity and punishment categories outcome variables.

The first type of two-part model used was the Heckman model, which is a widely used and easily understood sample selection model. The effect of the independent variables on the first dependent variable, sanction severity, was estimated with a Heckman ordered probit model ('heckoprobit' in Stata14). While Stata14 is able to estimate most types of regression models with the Heckman correction, the multinomial logistic regression model is not one of them. As the goal of using the second operationalization of the dependent variable, that being the specific punishment categories outcome, is to obtain estimates of the unique effect of the independent variables on each category of the punishment variable, a series of nested Heckman probit models ('heckprobit' in Stata14) were run to approximate a multinomial model.

By way of caveat, it should be acknowledged that the statistical strategy of estimating a series of nested Heckman probit models with dichotomous indicators for each category of punishment outcome operates differently for the middle range punishment categories (categories 2-4) than it does for those at the ends of the spectrum (categories 1 and 5). To illustrate this point, when considering the model where receipt of punishment category 5 (new conviction with sentence enhancement) is compared to all other categories, the outcome indicates receiving the most severe sanction versus all others. The same can be said in the opposite direction for punishment category 1 (no formal punishment) – the model compares those who receive the least severe sanction to all other punishment categories. However, for punishment categories 2-4, the same cannot be said. In this case, when estimating the model for the dichotomous outcome receipt of category 2 (modification of privilege), the comparison group includes inmates who received *both a lesser and more severe* sanction, potentially confusing interpretation

of the findings from these models. This same limitation holds for the dichotomous indicators for punishment categories 3 and 4 as well.

Addressing this limitation of the nested Heckman probit models and in an effort retain the information of the categorical variable that is lost when forcing it into a series of mutually exclusive dichotomies that was necessary for the nested Heckman probit models, a final two-stage model was estimated. This process involved using the variables of interest and the exclusion restrictions to estimate a simple probit model predicting selection (whereby selection into the formal misconduct/disciplinary proceeding subsample=1), using that information to create the Inverse Mills Ratio (IMR) of the hazard for selection (using the Heckman post-hoc 'mills' command in Stata14), and then including the IMR as a covariate in the estimation equation (Duan, Manning, Morris, & Newhouse, 1984) – the multinomial logistic regression model ('mlogit' in Stata14).

A second series of multivariate models were estimated to address the second research question, as to whether the extra-legal factors of race/ethnicity and gender condition the relationship between the legal and quasi-legal inmate characteristics and punishment outcome (see Chapter 5). Two different strategies were employed in order to examine the potential conditioning effect of the extra-legal factors. First, a series of interaction terms between the extra-legal factors and the legal factors (e.g., Male * Instant misconduct offense, Non-white * Prior misconduct history) were estimated, and included in the models as covariates (hypothesis three). The goal with these models is to examine the relationship between the legal factors and punishment outcome, controlling for all other relevant factors include the potential effect of the interaction between the extra-

legal and legal factors. This same procedure is used for the quasi-legal factors (hypothesis four).

Recognizing the complexities of interaction terms that include one or more categorical (including dichotomous) variables in the interaction, the conditioning effects are also examined with a split-sample methodology. In these models, which are run to address hypothesis three and four, the fully-saturated, multivariate, direct effects models are re-estimated on samples split by inmate gender (male versus female inmates) and a dichotomy of race/ethnicity (non-white versus white inmates). Differences in the magnitude, directionality, and/or significance level of the relationship between the focus independent variables (those being the legal factors and the quasi-legal factors) and punishment outcome between the two samples suggests that the specific extra-legal factor conditions the relationship between the independent variable/s and punishment outcome.

The final analysis for this research involves calculating a final three-way interaction term (Male * Gender * Legal factor) and including that in the multivariate model while simultaneously controlling for all the direct and consequent interactive effects (extra-legal * legal factors, extra-legal * quasi-legal factors, male * gender/ethnicity).

Table 11. Multinomial Model – Exclusion Restrictions Predicting Punishment Categories with cluster robust standard errors (326 clusters)

	Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	Coef	SE	z	Coef	SE	z	Coef	SE	z	Coef	SE	z
Controls												
Facility	.002	.001	1.64	-.005	.002	-3.05**	-.004	.001	-3.47***	.003	.001	2.68**
Federal	1.650	.422	3.91***	.979	.524	1.87	2.573	.413	6.23***	1.734	.419	4.14***
Current age	-.010	.007	-1.47	-.010	.008	-1.24	-.007	.006	-1.13	-.010	.007	-1.47
Exclusion Restrictions												
Mental health scale												
1	-.036	.205	-0.18	-.126	.231	-0.54	.149	.206	0.72	.164	.215	0.76
2	-.055	.226	-0.24	-.144	.244	-0.59	.109	.214	0.51	.168	.221	0.76
3	-.109	.247	-0.44	-.151	.280	-0.54	.069	.236	0.29	.020	.243	0.08
4	-.301	.452	-0.67	.143	.476	0.30	-.115	.448	-0.26	-.003	.448	-0.01
Negative affect	.030	.129	0.23	.281	.144	1.95	.247	.124	1.99*	.181	.138	1.31
Suicide												
Only thought about it	-.136	.191	-0.71	-.071	.197	-0.36	-.124	.191	-0.65	-.144	.193	-0.75
Prior attempt	.042	.220	0.19	-.078	.249	-0.31	.029	.230	0.12	-.143	.227	-0.63
GED or HS diploma	-.406	.148	-2.75	-.283	.148	-1.91	-.516	.146	-3.53***	-.380	.146	-2.66**
Married	-.070	.169	-0.42	.013	.185	0.07	-.267	.170	-1.57	-.145	.180	-0.81
Constant	1.952	.397	4.92***	2.558	.546	4.68***	3.141	.386	8.13***	1.166	.431	2.70**
Psuedo R2							.0317					
Wald $\chi 2$							231.54***					
Psuedo Loglikelihood							-9452.8831					

NOTE:
*** p ≤.001, ** p≤.01, * p≤.05

CHAPTER 4

RESULTS: DIRECT EFFECTS MODELS

Overview

This chapter presents the results of analyses designed to address the first research question surrounding the nature of the direct effects that various inmate characteristics exert on punishment outcome. Addressing hypothesis one and two, this chapter reviews the results of bivariate, (multivariate) partial, and fully-saturated multivariate models regressing punishment outcome on the legal, quasi-legal, and extra-legal inmate characteristics. In order to accommodate both operationalizations of the dependent variable (the interval-level, ordered categorical scale representing sanction severity, and the individual punishment categories, which is a nominal variable), with the exception of the initial bivariate models, each type of model will be run twice. The sanction severity scale outcome variable is modeled with Heckman ordered probit models, while the punishment categories outcome is modeled with a series of nested Heckman probit models (to approximate a multinomial model) as well as a two-stage multinomial model for robustness purposes. Since the purpose of the bivariate models is to establish an initial relationship between each of the inmate characteristics and punishment outcome, these models will only be presented for the Sanction Severity scale operationalization of punishment outcome.

Table 12. Bivariate relationships, Heckman Ordered Probit Models – Collapsed Equations; Dependent Variable = Sanction Severity Scale

	Collapsed Models		
	Coef	**Std. Error**	**z**
Legal Factors			
Most serious instant misconduct offense[a]			
Security/order violation	-.284	.073	-3.89***
Drug/alcohol	.717	.073	9.84***
Property/contraband	.095	.058	1.64
Assault: inmate	.540	.056	9.68***
Assault: staff	.472	.058	8.15***
Prior misconduct Hx	.051	.010	5.12***
Quasi-legal Factors			
Offense of conviction[b]			
Drug	-.230	.046	-0.64
Property/financial	-.012	.057	-0.20
Public order/misdemeanor	.169	.222	0.76
Other	.101	.072	1.40
Prison job	-.182	.039	-4.64***
Program participation	-.109	.041	-2.69**
Time served	.051	.024	2.10*
Prior incarceration	.107	.032	3.30***
Extra-legal Factors			
Male	.173	.080	2.17*
Race[c]			
Black	.121	.039	2.53**
Hispanic	.046	.059	0.78
Other	.108	.073	1.47
Controls			
Facility	.001	.000	3.44***
Federal	.359	.057	6.33***
Age	.001	.002	0.29

NOTES – Values are standardized coefficients and robust standard errors to adjust for clustering

*** p ≤.001, ** p≤.01, * p≤.05

[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Bivariate Regression Models

Table 12 reports the results of a series of bivariate regression equations in which sanction severity is regressed on each variable included, only one at a time, in the estimation model under observation – those being the variables within the categories of

legal, quasi-legal, extra-legal, and control variables discussed earlier.[20] The bivariate Heckman ordered probit models in this table demonstrate that, with the exception of the quasi-legal factor of offense of conviction, all variables assumed to be associated with punishment outcome are significantly associated with Sanction Severity at or greater than the .05 significance level. Considering the literature on similar decision points in the criminal courts and the results of the few studies conducted to date on the current point, all relationships are in the expected direction.

Looking more closely at the legal factors, it becomes clear that the more severe categories of inmate misconduct (assault on staff and inmates, drug/alcohol offenses, and those related to destruction of institutional property/possession of contraband) exert a positive influence on sanction severity such that committing one of those offenses increases the likelihood of receiving a more serious (or severe) punishment. Similarly, a single-unit increase in the metric of the variety scale representing prior misconduct results in an increase of .051 probit units on the sanction severity scale. Of the quasi-legal factors, there are some that represent criminogenic risk factors (e.g., offense of conviction, time served, prior incarceration) and some that represent engagement in prosocial activities within the prison setting (e.g., prison job and program participation). As is expected, the quasi-legal variables representing criminogenic risk factors have a positive association with sanction severity, and the variables representing engagement in prosocial activities have a negative association with sanction severity. The quasi-legal factor of offense of conviction is, however, not associated with sanction severity. Finally,

[20] See also, bivariate correlation matrix (Table 3) for further evidence of initial relationships.

both extra-legal factors are associated with sanction severity at the bivariate level. Both male gender (compared to female) and Black race/ethnicity (compared to white; no other racial category significant) are positively associated with sanction severity in the bivariate analyses, such that being male or Black is associated with a more severe sanction following disciplinary proceeding.

The control variables are not necessarily theoretically informed, but are included in the models due to their assumed (and previously demonstrated) impact on the dependent variable. The bivariate analyses presented in Table 12 indicate both the fixed effect for the facility within which inmates are housed and the indicator for whether that facility is within the Federal Bureau of Prisons or a state prison system are significantly associated with sanction outcome. Surprisingly, the third control variable, inmate age at time of interview, is not significantly associated with punishment outcome when operationalized as the Sanction Severity Scale.

Partial Multivariate Models

Tables 13-16 present the results of a series of Heckman ordered probit models designed to address the first hypothesis of research question one. The hypothesis states that, holding constant all other variables internal to each set of factors included in the models, there will be a significant relationship between each individual variable and the dependent variables under observation. In order to examine this hypothesis for the first dependent variable operationalized as the sanction severity scale, a Heckman ordered probit model was estimated regressing sanction severity on the control variables. Then in a sequential fashion, each block of variables (i.e., legal, quasi-legal, extra-legal) was

included in a model with the controls to establish a baseline for how the individual factors are associated with sanction severity. As was discussed previously in Chapter 3, the table for each analysis completed with a Heckman selection bias correction includes two models – (1) one from a sample selection equation and (2) another from the estimation model of interest. While both models are presented in each table, incidental selection necessitating the selection bias correction has already been verified[21], so only the results from the estimation models (or the Full Model) are presented and discussed in-text below.

As is shown in Table 13, of the three control variables, only the federal system indicator is significantly associated with sanction severity (β=.279, p<.01). While admittedly a very crude analysis at this point, this coefficient suggests that inmates housed in facilities within the federal system will likely receive a more severe punishment outcome than inmates not within the federal system. While the non-significant facility indicator is not surprising at this point, the non-significant relationship between age of inmate and sanction severity is surprising. Even though the age variable indicates at age time of interview and not age at time of disciplinary proceeding, similar to the general finding of a negative relationship between inmate age and self-reported and official misconduct (Flanagan, 1983; Steiner et al., 2014), it was expected that inmate age

[21] The significant value for the Wald test of independence of equations (χ^2 = 4.66, p=0.0309) and the sample selection correction coefficient AthRho (β=-.218, p<.05) reported on Table 13 indicate there is evidence of selection bias operating in the models, necessitating the use of a statistical technique to correct for sample selection. Use of a sample selection correction, such as the Heckman correction and the two-stage model with IMR employed in this study, minimizes the risk of biased findings resulting from the sample selection.

Table 13. Preliminary Heckman Ordered Probit Regression Model with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Sanction Severity Scale

		Selection Model			Full Model		
		Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors							
Most serious instant misconduct offense[a]							
Security/order violation							
Drug/alcohol							
Property/contraband							
Assault: inmate							
Assault: staff							
Prior misconduct History							
Quasi-legal Factors							
Offense of conviction[b]							
Drug							
Property/financial							
Public order/misdemeanor							
Other							
Prison job							
Program participation							
Time served							
Prior incarceration							
Extra-legal Factors							
Male							
Race[c]							
Black							
Hispanic							
Other							
Controls							
Facility		-.001	.000	-1.44	.000	.000	0.88
Federal		-.301	.102	-3.14**	.279	.093	2.99**
Age		-.011	.001	-7.46***	.000	.002	0.06
Exclusion Restrictions							
Mental health scale							
1		.112	.037	3.07**			
2		.116	.037	3.12**			
3		.168	.043	3.89***			
4		.108	.080	1.34			
Negative affect		.277	.022	12.60***			
Suicide							
Only thought about it		.145	.036	4.08***			
Prior attempt		.137	.034	3.96***			
GED or HS diploma		.141	.024	5.94***			
Married		-.229	.026	-8.77***			
Constant		166	.108	1.55			
Rho		-.214	.096				
	Cut 1				-1.744	.111	-15.65***
	Cut 2				-.480	.105	-4.56***
	Cut 3				-.168	.111	-1.52
	Cut 4				.677	.119	5.69***
AthRho					-.218	.101	-2.16*
Wald χ^2			34.04***				
Psuedo log likelihood			-20143.42				
Wald test – independence of equations			$\chi^2 = 4.66$, p=0.0309				

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Table 14. Preliminary Heckman Ordered Probit Regression Model with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Sanction Severity Scale

		Selection Model			Full Model		
		Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors							
Most serious instant misconduct offense[a]							
Security/order violation		--	--	--	-.206	.064	-3.22***
Drug/alcohol		--	--	--	.697	.064	10.92***
Property/contraband		--	--	--	.157	.051	3.07**
Assault: inmate		--	--	--	.586	.048	12.28***
Assault: staff		--	--	--	.530	.054	9.87***
Prior misconduct History		--	--	--	-.004	.010	-0.41
Quasi-legal Factors							
Offense of conviction[b]							
Drug							
Property/financial							
Public order/misdemeanor							
Other							
Prison job							
Program participation							
Time served							
Prior incarceration							
Extra-legal Factors							
Male							
Race[c]							
Black							
Hispanic							
Other							
Controls							
Facility		-.000	.000	-1.27	.000	.000	0.71
Federal		-.347	.107	-3.25***	.309	.094	3.29***
Age		-.011	.002	-7.37***	-.000	.002	-0.11
Exclusion Restrictions							
Mental health scale							
1		.126	.038	3.35***			
2		.137	.038	3.61***			
3		.179	.044	4.04***			
4		.150	.082	1.83			
Negative affect		.295	.023	12.84***			
Suicide							
Only thought about it		.152	.037	4.08***			
Prior attempt		.129	.036	3.55***			
GED or HS diploma		.144	.024	5.95***			
Married		-.242	.028	-8.67***			
Constant		.070	.110	0.64			
Rho		-.096	.103				
	Cut 1				-1.481	.122	12.17***
	Cut 2				-.178	.116	-1.55
	Cut 3				.154	.121	1.28
	Cut 4				1.078	.129	8.36***
AthRho					-.097	.104	-0.93
Wald χ^2		356.18***					
Psuedo log likelihood		-17946.29					
Wald test – independence of equations		$\chi^2 = 0.86$, p=0.3536					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

would be significantly associated with sanction severity. Looking briefly at the coefficient for inmate age for the sample selection model in Table 13, it is clear that inmate age is significantly associated with likelihood of receiving a formal misconduct ticket/guilty finding at disciplinary hearing (the selection variable) in a negative direction, but this relationship is not sustained once controlling for the effect of selection on sanction severity.

Table 14 presents the second partial model, in which the legal factors are included in the control-only model. The first legal factor is an ordered categorical variable that indicates the type of misconduct offense from the most recent disciplinary hearing for which the punishment under observation is received. In this initial model with just legal factors and control variables, all categories of instant misconduct offense are significant predictors of sanction severity. When compared to the reference category of "disruptive behavior," inmates who proceed through the disciplinary process for a security/order violation (β=-.206) are significantly less likely to receive a punishment at the high end of the sanction severity scale for that offense. The categories of assault on another inmate (β=.586), assault on institutional staff (β=.530), misconduct related to institutional property and/or contraband (β=.157), and drug/alcohol offense are all positively associated with the dependent variable (β=.679), suggesting those offenses are likely to receive a more severe punishment outcome when compared with the offense of disruptive behavior. The other legal factor, prior misconduct history, is surprisingly not significantly associated with sanction severity.

Table 15. Preliminary Heckman Ordered Probit Regression Model with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Sanction Severity Scale

	Selection Model			Full Model		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation						
Drug/alcohol						
Property/contraband						
Assault: inmate						
Assault: staff						
Prior misconduct History						
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.024	.043	-0.55	-.031	.046	-0.68
Property/financial	-0.876	.050	-1.74	.000	.056	0.02
Public order/misdemeanor	-.076	.169	-0.45	.211	.221	0.96
Other	-.198	.062	-3.17**	.048	.074	0.65
Prison job	-.098	.037	-2.66**	-.223	.041	-5.41***
Program participation	.230	.033	6.87***	-.123	.042	-2.93**
Time served	.466	.022	21.40***	.081	.042	1.94*
Prior incarceration	.216	.030	7.30***	.105	.036	2.92**
Extra-legal Factors						
Male						
Race[c]						
Black						
Hispanic						
Other						
Controls						
Facility	-.000	.000	-0.36	.000	.000	0.33
Federal	-.484	.091	-5.29***	.355	.098	3.73***
Age	-.027	.002	-16.19***	-.004	.003	-1.17
Exclusion Restrictions						
Mental health scale						
1	.114	.045	2.53*			
2	.149	.051	2.92**			
3	.222	.054	4.11***			
4	.114	.102	1.11			
Negative affect	.311	.029	10.64***			
Suicide						
Only thought about it	.090	.047	1.93			
Prior attempt	.214	.044	4.83***			
GED or HS diploma	.064	.029	2.20*			
Married	-.188	.037	-5.14***			
Constant	-.932	.107	-8.68***			
Rho	-.170	.125				
Cut 1				-1.769	.183	-9.69***
Cut 2				-.490	.187	-2.62**
Cut 3				-.158	.192	-0.82
Cut 4				.709	.204	3.48***
AthRho				-.172	.129	-1.33
Wald χ^2	88.09***					
Psuedo log likelihood	-13422.40					
Wald test – independence of equations	$\chi^2 = 1.78$, p=0.1822					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Table 16. Preliminary Heckman Ordered Probit Regression Model with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Sanction Severity Scale

		Selection Model			Full Model		
		Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors							
Most serious instant misconduct offense[a]							
Security/order violation							
Drug/alcohol							
Property/contraband							
Assault: inmate							
Assault: staff							
Prior misconduct History							
Quasi-legal Factors							
Offense of conviction[b]							
Drug							
Property/financial							
Public order/misdemeanor							
Other							
Prison job							
Program participation							
Time served							
Prior incarceration							
Extra-legal Factors							
Male		.353	.058	6.07***	.141	.075	1.88
Race[c]							
Black		.199	.031	6.50***	-.003	.034	-0.10
Hispanic		-.036	.040	-0.90	.061	.048	1.28
Other		.098	.049	1.99*	.095	.058	1.62
Controls							
Facility		-.000	.000	-0.46	.000	.000	0.96
Federal		-.364	.091	-4.00***	.288	.090	3.21***
Age		-.011	.001	-7.22***	.001	.002	0.55
Exclusion Restrictions							
Mental health scale							
1		.170	.036	4.75***			
2		.202	.035	5.73***			
3		.245	.045	5.48***			
4		.191	.078	2.44*			
Negative affect		.281	.023	12.50***			
Suicide							
Only thought about it		.159	.036	4.46***			
Prior attempt		.201	.033	6.02***			
GED or HS diploma		.149	.024	6.22***			
Married		-.205	.026	-7.90***			
Constant		-.349	.119	-2.94**			
Rho		-.300	.085				
	Cut 1				-1.631	.128	-12.70***
	Cut 2				-.380	.126	-3.01**
	Cut 3				-.071	.133	-0.53
	Cut 4				.762	.144	5.28***
AthRho					-.309	.093	-3.32***
Wald χ^2			57.95***				
Psuedo log likelihood			-19951.87				
Wald test – independence of equations			χ^2 = 11.00, p=0.0001				

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

The partial model presented in Table 15 removes the legal factors and introduces the variables that make up the quasi-legal factors to establish these initial relationships. In this model with just the control variables, four of the five quasi-legal factors are significantly associated with sanction severity in the expected directions. Results indicate that having a job within the prison and program participation are each negatively associated with sanction severity (β=-.223 and β=-.123, respectively), such that those who work or are involved in inmate programming are likely to receive a sanction on the lower end of the sanction severity scale. Inmates who have been in prison prior to the current period of incarceration also are significantly more likely to receive a more severe punishment sanction than are those who are serving their first prison sentence (β=.105). There is a positive relationship between time served in prison and sanction severity such that for each unit increase in number of months served, the value on the sanction severity scale raises .08 probit units (β=.081).

Findings of the final partial model, with just the extra-legal factors and control variables, are presented in Table 16. Results of this partial model suggest that there is no statistically significant relationship between either inmate gender or race/ethnicity and punishment severity. Both of these factors are significantly related to selection, however, such that men are significantly more likely to receive a formal misconduct ticket/finding of guilty compared to women, as well as black inmates and those in the "other" racial/ethnic when compared to white inmates. The results of this Heckman selection model suggest that once controlling for the fact that male and black/other racial inmates are more likely to receive a formal misconduct ticket/guilty finding post-disciplinary

proceeding, gender and race/ethnicity do not exert an effect on sanction severity as currently operationalized in this partial, exploratory model.

Each of the partial models presented in Tables 13-16 and discussed above is an ordered probit model, appropriate for the first operationalization of the dependent variable – the ordered categorical sanction severity scale. Partial models to establish relationships between the variables of interest are conducted with the first operationalization of the dependent variable, as the second operationalization of the dependent variables looks simply at each category of the sanction severity scale on its own. Since these relationships are already established, partial models will not be conducted for the second operationalization of the dependent variable.

Figure 1. Overview of Significant Relationships; Theoretical Variables and Sanction Severity Scale[a]

	Partial Model 2	Partial Model 3	Partial Model 4
Legal Factors			
Most serious instant misconduct offense[b]			
Security/order violation	-		
Drug/alcohol	+		
Property/contraband	+		
Assault: inmate	+		
Assault: staff	+		
Prior misconduct History			
Quasi-legal Factors			
Offense of conviction[c]			
Drug			
Property/financial			
Public order/misdemeanor			
Other		-	
Prison job		-	
Program participation		+	
Time served		+	
Prior incarceration			
Extra-legal Factors			
Male			
Race[d]			
Black			
Hispanic			
Other			

[a] Information presented in Tables 14-16
[b] Reference: Disruptive behavior [c] Reference: Person [d] Reference: White

Blank cell indicates non-significant relationship
+ Indicates positive relationship, significant at least $p<.05$
- Indicates negative relationship, significant at least $p<.05$

The findings of the partial models presented in Figure 1 and in Tables 14-16 help to address the initial hypothesis that legal, quasi-legal, and extra-legal factors will be significantly associated with sanction outcome. The results of this first set of analyses fail to support this hypothesis. Findings indicate that, when estimating models with just a single block of theoretical variables at a time, the legal factor of prior inmate misconduct history, quasi-legal factor of offense of conviction, and extra-legal factors of gender and race/ethnicity are not significantly related to sanction severity.

Fully Saturated Multivariate Models

While the partial models examined above are multivariate models in that they include the effect of various control variables as well as the other theoretical variables within each group, the models presented to this point have not been fully saturated multivariate models. Unlike the partial models that regress sanction severity on a single set of either legal, quasi-legal, or extra-legal factors (plus controls) at a time, the fully saturated model includes all of the variables. This allows for estimating the effect of each independent variable on the dependent variable, while holding constant the statistical effect of all other variables that have been included in the full model.

Inmate Characteristics on Sanction Severity Scale Outcome Variable

Table 17 shows the results of a fully saturated multivariate model where sanction severity is regressed on all variables under observation. In order to correct for the potential selection bias inherent in the research design, the Heckman correction is used with the ordered probit regression model. Starting with the legal factors, results of this full model indicate that both the severity of instant misconduct offense and inmate prior

misconduct history are significantly associated with sanction severity. Reflecting nearly the same pattern that was observed in the partial models (Table 14), when compared to the reference category of engaging in disruptive behavior, the category of security/order violation is negatively associated with sanction severity (β=-.307) while assault of staff and fellow inmate and drug/alcohol misconduct are all positively associated with sanction severity (β=.467, β=.528, and β=.649, respectively). Different from the partial model shown in Table 14, the misconduct category reflecting a property/contraband offense is not significantly related to sanction severity in the fully saturated model.

Reflecting a large departure from the partial model in Table 14, the variable reflecting inmate prior misconduct history, which was not significantly related to sanction severity previously, achieves significance within the fully saturated model (Table 17). Contrary to expectations, however, the relationship between a prior misconduct history and sanction severity is negative, such that having a more extensive prior misconduct history significantly decreases the likelihood that an inmate will receive a punishment option at the higher end of the sanction severity scale (β=-.023). As is reflected in the standardized coefficient, the magnitude of this relationship is, while negative and therefore counter-intuitive, relatively small. It is interesting that a variable that was not significant in a more trimmed, partial model achieves significance in a fully saturated model. This phenomena could be suggestive of some sort of hidden interaction between the variable of interest and another one in the fully saturated model that was not in the partial model. Among others, this potential interaction will be the subject of later analyses.

Table 17. Heckman Ordered Probit Model with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Sanction Severity Scale

	Selection Model			Full Model		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.307	.074	-4.17***
Drug/alcohol				.649	.068	9.55***
Property/contraband				.095	.057	1.66
Assault: inmate				.528	.056	9.41***
Assault: staff				.467	.064	7.28***
Prior misconduct History				-.023	.012	-1.94*
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.022	.045	-0.48	-.035	.051	-0.69
Property/financial	-.095	.053	-1.81	.035	.060	0.58
Public order/misdemeanor	-.039	.179	-0.22	.114	.232	0.49
Other	-.163	.064	-2.55*	.044	.077	0.58
Prison job	-.114	.038	-3.03**	-.153	.043	-3.53***
Program participation	.226	.035	6.52***	-.099	.044	-2.23*
Time served	.491	.024	20.44***	-.019	.049	-0.38
Prior incarceration	.217	.030	7.32***	.068	.039	1.76
Extra-legal Factors						
Male	.071	.063	1.13	.100	.081	1.23
Race[c]						
Black	.060	.036	1.68	-.023	.041	-0.58
Hispanic	-.153	.046	-3.31***	.013	.061	0.21
Other	.027	.064	0.42	.093	.079	1.18
Controls						
Facility	.000	.000	0.63	.000	.000	0.29
Federal	-.536	.093	-5.75***	.415	.099	4.21***
Age	-.029	.002	-15.59***	.002	.004	0.63
Exclusion Restrictions						
Mental health scale						
1	.139	.047	2.95**			
2	.191	.051	3.76***			
3	.246	.057	4.32***			
4	.144	.106	1.35			
Negative affect	.337	.031	10.78***			
Suicide						
Only thought about it	.103	.049	2.12*			
Prior attempt	.219	.045	4.91***			
GED or HS diploma	.047	.031	1.53			
Married	-.188	.039	-4.86***			
Constant	-1.179	.125	-9.43***			
Rho	-.263	.141				
Cut 1				-1.737	.188	-9.25***
Cut 2				-.469	.197	-2.38*
Cut 3				-.125	.205	-0.61
Cut 4				.791	.225	3.51***
AthRho				-.270	.151	-1.79
Wald χ^2	319.57***					
Psuedo log likelihood	-11795.71					
Wald test – independence of equations	$\chi^2 = 3.19$, p=0.0740					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Moving down the categories in the fully saturated Heckman ordered probit model presented in Table 17, some of the relationships between the quasi-legal factors and sanction severity have changed from those previously observed in the partial model (presented in Table 15). Offense of incarceration remains a non-significant predictor of sanction severity in the fully saturated model. Both having a having a prison job (β=-.153) and involvement in programming (β=-.099) maintain a statistically significant negative relationship with sanction severity. The effect of the dichotomous indicator for a prior incarceration, and the ratio indicator of time served, on the other hand, lose significance when included in the fully saturated model. Consistent with the findings of the partial model shown in Table 16, neither extra-legal factor – gender or race/ethnicity – is found to be significantly associated with sanction severity in the saturated model (see Table 17).

Inmate Characteristics on Punishment Categories Outcome Variable

Nested Heckman probit models. Due to the number of individual models that are needed to run the series of nested Heckman probit models for the dependent variable when operationalized as Punishment Categories, the results of this analysis are reported in five tables – one for each category of the sanction option. Table 18.1 reveals the results of the Heckman probit model for the sanction category "no formal punishment." As is observed on this table, relationships between the independent variables and this category of the dependent variable are almost the mirror opposite of what has been observed previously in the fully saturated Heckman ordered probit model (see Table 17). In the current model where the "no punishment" category is a dichotomous indicator, the majority of the categories of instant misconduct offense are significant, and in the

opposite direction as the previous analyses. Here the significant relationship between assault on staff and inmates, drug/alcohol misconduct offense, and the outcome are negative, while security/order violation is positively associated with this outcome of receiving no formal punishment. Prior history of misconduct, the second legal factor, is not a significant predictor in this model. Looking at the quasi-legal factors, prison job is significantly associated with sanction outcome (see Table 17). In this case, however, the effects are positive. Neither of the extra-legal factors are significantly associated with receiving no punishment.

Table 18.2 presents the results of the Heckman probit model regressing the second sanction category (modification of inmate privileges) on the full group of independent and control variables. When looking at the block of legal factors, the results are consistent with those reported in Table 18.1: security/order violation is positively associated with modification of privileges, and the more serious misconduct offenses of assault and drug/alcohol offenses are negatively associated with privilege modification. Also, having a prison job and participation in institutional programming are positively associated with the sanction outcome of privilege modification.

Table 18.1 Series of nested Heckman Probit Models with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Punishment Category "No Formal Punishment"

	Selection Model			Sanction Category 1		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				.106	.146	0.73
Drug/alcohol				-.480	.174	-2.77***
Property/contraband				-.048	.099	-0.48
Assault: inmate				-.386	.109	-3.53***
Assault: staff				-.295	.122	-2.42**
Prior misconduct History				.034	.023	1.48
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.022	.045	-0.48	.097	.110	0.88
Property/financial	-.095	.053	-1.81	-.020	.131	-0.15
Public order/misdemeanor	-.048	.178	-0.27	.676	.316	2.14*
Other	-.164	.064	-2.56**	-.063	.193	-0.33
Prison job	-.118	.038	-3.12**	.238	.087	2.72**
Program participation	.227	.035	6.55***	.100	.088	1.14
Time served	.490	.024	20.42***	.010	.072	0.14
Prior incarceration	.215	.030	7.25***	-.110	.073	-1.50
Extra-legal Factors						
Male	.071	.063	1.12	.002	.127	0.01
Race[c]						
Black	.060	.036	1.68	.015	.056	0.17
Hispanic	-.151	.046	-3.28***	-.148	.142	-1.04
Other	.032	.064	0.50	.073	.137	0.54
Controls						
Facility	.000	.000	0.64	.001	.001	2.36*
Federal	-.535	.093	-5.72***	-.939	.248	-3.79***
Age	-.028	.002	-15.66***	.005	.006	0.88
Exclusion Restrictions						
Mental health scale						
1	.132	.047	2.79**			
2	.178	.051	3.49***			
3	.246	.059	4.19***			
4	.145	.108	1.34			
Negative affect	.339	.031	10.88***			
Suicide						
Only thought about it	.105	.049	2.16*			
Prior attempt	.225	.048	4.81***			
GED or HS diploma	.050	.031	1.61			
Married	-.192	.039	-4.92***			
Constant	-1.181	.125	-9.42***	-2.306	.360	-6.40***
Rho	-.029	.209				
AthRho				-0.29	.209	-0.14
Wald χ^2	79.73***					
Psuedo log likelihood	-6477.029					
Wald test – independence of equations	$\chi^2 = 0.02$, p=0.8884					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Table 18.2. Series of nested Heckman Probit Models with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Punishment Category "Modification of Privileges"

	Selection Model			Sanction Category 2		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				.264	.094	2.81**
Drug/alcohol				-.682	.104	-6.55***
Property/contraband				-.102	.061	-1.68
Assault: inmate				-.727	.076	-9.61***
Assault: staff				-.617	.084	-7.33***
Prior misconduct History				.031	.016	1.92*
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.020	.045	-0.44	.005	.063	0.01
Property/financial	-.096	.053	-1.83	-.016	.078	-0.21
Public order/misdemeanor	-.047	.177	-0.27	-.739	.310	-2.38
Other	-.164	.064	-2.58**	-.168	.101	-1.66
Prison job	-.119	.038	-3.16**	.190	.060	3.19***
Program participation	.225	.035	6.47***	.123	.058	2.13*
Time served	.490	.024	20.47***	.061	.065	0.94
Prior incarceration	.218	.030	7.35***	-.012	.051	-0.24
Extra-legal Factors						
Male	.071	.063	1.14	-.215	.083	-2.58**
Race[c]						
Black	.060	.036	1.68	-.001	.053	-0.02
Hispanic	-.152	.045	-3.32***	.032	.071	0.45
Other	.030	.064	0.46	-.236	.103	-2.30*
Controls						
Facility	.000	.000	0.59	.002	.000	4.03***
Federal	-.533	.093	-5.73***	-.509	.126	-4.05***
Age	-.029	.002	-15.67***	-.009	.004	-2.10*
Exclusion Restrictions						
Mental health scale						
1	.136	.047	2.93**			
2	.191	.050	3.84***			
3	.260	.057	4.59***			
4	.127	.104	1.22			
Negative affect	.333	.032	10.44***			
Suicide						
Only thought about it	.109	.049	2.21*			
Prior attempt	.222	.044	5.00***			
GED or HS diploma	.051	.030	1.70			
Married	-.180	.039	-4.59***			
Constant	-1.175	.126	-9.29***	-1.077	.277	-3.90***
Rho	.482	.190				
AthRho				.526	.248	2.12*
Wald χ^2	321.89***					
Psuedo log likelihood	-8016.485					
Wald test – independence of equations	$\chi^2 = 4.50$, p=0.0339					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Table 18.3. Series of nested Heckman Probit Models with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Punishment Category "Higher Custody - Internal"

	Selection Model			Sanction Category 3		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				.282	.132	2.14*
Drug/alcohol				-.123	.124	-0.99
Property/contraband				.093	.093	0.79
Assault: inmate				-.045	.091	-0.49
Assault: staff				-.198	.100	-1.98
Prior misconduct History				.036	.019	1.84
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.022	.045	-0.48	.062	.092	0.68
Property/financial	-.084	.053	-1.80	-.053	.110	-0.48
Public order/misdemeanor	-.048	.178	-0.27	-.165	.454	-1.35
Other	-.164	.064	-2.56**	.356	.132	2.69**
Prison job	-.117	.038	-3.11**	.110	.068	1.62
Program participation	.227	.035	6.55***	.073	.075	1.97
Time served	.490	.234	20.44***	.019	.066	-0.29
Prior incarceration	.215	.030	7.25***	-.012	.060	-0.20
Extra-legal Factors						
Male	.071	.063	1.12	.191	.101	1.89*
Race[c]						
Black	.050	.025	1.67	.028	.067	0.42
Hispanic	-.151	.046	-3.28***	.034	.099	0.35
Other	.032	.064	0.49	.280	.126	2.22*
Controls						
Facility	.000	.000	0.63	-.002	.001	-3.41***
Federal	-.535	.094	-5.72***	-.510	.190	-2.68**
Age	-.028	.002	-15.64***	-.002	.005	-0.33
Exclusion Restrictions						
Mental health scale						
1	.132	.047	2.79**			
2	.179	.051	3.53***			
3	.246	.058	4.21***			
4	.145	.108	1.34			
Negative affect	.339	.031	10.89***			
Suicide						
Only thought about it	.104	.049	2.14*			
Prior attempt	.225	.047	4.83***			
GED or HS diploma	.049	.030	1.63			
Married	-.193	.039	-4.90***			
Constant	-1.180	.125	-9.41***	-.904	.35	-2.696**
Rho	.022	.077				
AthRho				.022	.177	0.13
Wald χ^2	84.52***					
Psuedo log likelihood	-7250.111					
Wald test – independence of equations	$\chi^2 = 0.02$, p=0.9000					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Contrary to the previous analysis in model Table 18.1, both extra-legal factors are significantly associated with the outcome in this model predicting receiving the punishment option of modification of privileges (sanction category 2). Results indicate that males are significantly less likely to receive this punishment option than are females. Similarly, when compared to white inmates, those who fall into the Other racial/ethnic category are also significantly less likely to receive this punishment option. Black and Hispanic racial/ethnic categories are not significantly related to the dependent variable.

The results of the Heckman probit model for the sanction category transfer to higher custody within the same institution, are reported in Table 18.3. A different pattern of significance emerges in the current model. Only one category of the instant misconduct offense variable is significantly associated with transfer to higher custody. Compared to the disruptive behavior category, those inmates who are found guilty of a security/order violation are significantly more likely to receive an increase in custody modification internal to the current facility. Results indicate that, compared to the reference category of a person-related offense, the "other" offense of conviction category is positively associated (β=.356, $p\leq$.01) with custody transfer. Importantly, the extra-legal factors of "other" race/ethnicity and male gender are also positively associated with increase in custody (β=.191 and β=.280, respectively).

Table 18.4. Series of nested Heckman Probit Models with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Punishment Category "External CustodyTransfer/Solitary"

	Selection Model			Sanction Category 4		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.391	.105	-3.73***
Drug/alcohol				.342	.092	3.73***
Property/contraband				-.023	.065	-0.35
Assault: inmate				.569	.067	8.45***
Assault: staff				.577	.071	8.11***
Prior misconduct Hx						
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.020	.045	-0.44	-.051	.068	-0.75
Property/financial	-.095	.053	-1.79	.011	.085	0.13
Public order/misdemeanor	-.047	.177	-0.27	.239	.253	0.94
Other	-.161	.064	-2.51*	-.065	.114	-0.57
Prison job	-.116	.038	-3.10**	-.281	.054	-5.18***
Program participation	.225	.035	6.48***	-.171	.048	-3.56***
Time served	.490	.024	20.44***	-.068	.053	-1.29
Prior incarceration	.216	.030	7.26***	.055	.048	-1.14
Extra-legal Factors						
Male	.072	.063	1.14	.109	.079	1.38
Race[c]						
Black	.059	.036	1.64	.039	.054	0.74
Hispanic	-.153	.046	-3.32***	-.028	.069	-0.41
Other	.033	.064	0.52	-.046	.105	-0.43
Controls						
Facility	.000	.000	0.61	-.003	.000	-7.17***
Federal	-.533	.094	-5.69***	.833	.113	7.34***
Age	-.028	.002	-15.56***	.010	.004	2.73**
Exclusion Restrictions						
Mental health scale						
1	.137	.047	2.93**			
2	.186	.050	3.68***			
3	.253	.058	4.35***			
4	.125	.107	1.17			
Negative affect	.341	.031	10.95***			
Suicide						
Only thought about it	.099	.049	2.02*			
Prior attempt	.220	.046	4.78***			
GED or HS diploma	.043	.030	1.42			
Married	-.189	.039	-4.38***			
Constant	-1.18	.126	-9.37***			
Rho	-.334	.140				
AthRho				-.347	.158	-2.20*
Wald χ^2	296.53***					
Psuedo log likelihood	-8241.612					
Wald test – independence of equations	$\chi^2 = 4.83$, p=0.0280					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Table 18.5. Series of nested Heckman Probit Models with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Punishment Category "Received New Sentence"

	Selection Model			Sanction Category 5		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.336	.114	-2.95**
Drug/alcohol				.514	.090	5.70***
Property/contraband				.109	.075	1.44
Assault: inmate				.241	.074	3.26***
Assault: staff				.209	.086	2.42*
Prior misconduct Hx				.007	.015	0.43
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.022	.046	-0.48	-.007	.069	-0.10
Property/financial	-.096	.053	-1.81	.046	.080	0.58
Public order/misdemeanor	-.046	.178	-0.26	.222	.235	0.95
Other	-.164	.064	-2.57**	-.003	.105	-0.03
Prison job	-.117	.038	-3.11**	-.008	.061	-0.13
Program participation	.227	.035	6.56***	-.012	.059	-0.20
Time served	.490	.034	20.44***	.040	.056	0.72
Prior incarceration	.215	.030	7.27***	.116	.049	2.37*
Extra-legal Factors						
Male	.071	.063	1.13	.016	.118	0.14
Race[c]						
Black	.060	.036	1.68	-.064	.057	-1.12
Hispanic	-.151	.046	-3.28***	-.016	.075	-0.21
Other	.030	.064	0.48	.111	.100	1.11
Controls						
Facility	.000	.000	0.62	.003	.000	5.75***
Federal	-.535	.093	-5.72***	-.108	.130	-0.83
Age	-.029	.002	-15.63***	-.003	.004	-0.79
Exclusion Restrictions						
Mental health scale						
1	.133	.017	2.82**			
2	.181	.051	3.55***			
3	.246	.058	4.21***			
4	.147	.108	1.36			
Negative affect	.338	.031	10.84***			
Suicide						
Only thought about it	.105	.049	2.16*			
Prior attempt	.224	.046	4.85***			
GED or HS diploma	.050	.030	1.64			
Married	-.192	.039	-4.94***			
Constant	-1.180	.126	-9.39***	-1.673	.302	-5.54***
Rho	-.093	.156				
AthRho				-.093	.157	-0.59
Wald χ^2		122.59***				
Psuedo log likelihood		-7959.42				
Wald test – independence of equations		$\chi^2 = 0.35$, p=0.5528				

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White

Effects change more substantively when looking at the fourth sanction category, a transfer to another facility or solitary confinement (see Table 18.4). Consistent with the results of the fully saturated model for the sanction severity scale (see Table 17), committing a security/order violation is significantly and negatively associated with transfer to another location or solitary confinement (β=-.391), while a drug/alcohol violation (β=.342) and assault on fellow inmate (β=.569) and staff (β=.577) are significantly and positively associated with the issuance of this punishment. Also consistent with the results reported in Table 17, having a job within the prison (β=-.281) and involvement in programming (β=-.171) have a significant negative association with external transfer or placement in solitary confinement. Continuing the trend of consistency in findings with regard to the extra-legal factors, neither gender nor race/ethnicity is statistically associated with the sanction outcome.

Table 18.5 presents the results of the final nested Heckman probit model for the most severe punishment category, crime conviction and receipt of a new sentence. Results of this model suggest that the legal factor of severity of instant misconduct offense is, with the exception of the quasi-legal factor of having been previously incarcerated, the only independent variable under observation in this final probit model that is significantly associated (β=.241) with receiving this most severe of punishment options. As has been the trend in the majority of prior analyses, the observed pattern of results suggests that, compared to a disruptive behavior misconduct charge, the more serious varieties of inmate misconduct – those being assault on inmates and staff and drug/alcohol violations – maintain a significant positive association with receiving this most severe of punishment options (β=.209 and β=.514 respectively). The less serious

type of misconduct, committing a security/order violation, has a significantly negative association with receiving the most severe sanction option (β=.-.336), which is consistent with expectations. The only other variable of all quasi- and extra-legal factors is the quasi-legal criminogenic risk indicator representing having been previously incarcerated prior to the current term of incarceration. The positive value of this statistically significant coefficient (β=.116) suggests that, controlling for all other relevant factors, when an inmate has previously been incarcerated prior to their current sentence, the likelihood of receiving this punishment option increases by .116 probit units.

Two-stage model with IMR. As was discussed in the Chapter 3, the strategy of estimating a series of nested Heckman probit models with dichotomous outcomes for each sanction category in the second dependent variable of punishment categories – the results of which are presented in the prior section, Tables 18.1 through 18.5 – was employed out of necessity. Stata14 does not have the capacity to estimate the preferred multinomial logistic regression model within the Heckman suite of analysis commands. One of the main limitations of this statistical approach is the inherent loss of data that accompanies forcing an ordered categorical variable into a series of dichotomies (which are inherently not-ordered). Stata14 does, however, allow for the ability to estimate the unique effect of all independent variables on each category of the dependent variable.

While not used as frequently as the very popular Heckman method of correcting for sample selection bias, there is yet another way to run a two-stage model that results in an appropriate correction for sample selection with a multinomial logistic regression equation. As was described in the analytic strategy discussed in Chapter 3, this two-step process involves first estimating a probit model for selection and using that model to

calculate the Inverse Mills Ratio (one of many ways to calculate the hazard for selection). Second, the Inverse Mills Ratio is inserted into the estimation model (in this case, a multinomial logistic regression) as a covariate to correct for the hazard for selection. This section discusses the results of this analytic approach to modeling the effects of the legal, quasi-legal, and extra-legal variables on the second dependent variable looking at the individual punishment categories.

Table 19 shows the results of this two-stage multinomial logistic regression model that includes the Inverse Mills Ratio to correct for potential sample selection bias. Consistent with presentation of the results from prior models, results from the sample selection model will not be discussed in favor of reporting and interpreting findings from the estimation model of interest. When looking at the column labeled Sanction Category 2, which represents the likelihood of receiving a sanction in the category of modification of privileges as compared with the reference category (receiving no punishment), it is immediately obvious that the variables in the model are uniformly not significantly associated with the likelihood of receiving this punishment category. By way of interpretation, this means that the variables included within the groups of legal, quasi-legal, and extra-legal factors are not significantly related to receiving the punishment outcome of modification of privileges. While beyond the scope of the current study, it is possible to surmise from this finding that receiving a sanction related to modification of privileges is rather random, and cannot be predicted by the constellation of variables under observation in the current study.

Table 19. Two-stage Multinomial Model Controlling for Sample Selection with IMR, with cluster robust standard errors (326 clusters); Dependent Variable = Punishment Categories

	Stage 1: Probit Model			Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)[d]											
	Selection Model			Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	β	SE	z	β	SE	z	β	SE	Coef	β	z	β	β	Coef	SE
Legal Factors															
Most serious instant misconduct offense[a]															
Security/order violation				.017	.319	0.05	.240	.381	0.63	-.805	.347	-2.32*	-.764	.369	-2.07*
Drug/alcohol				.137	.452	0.30	.851	.483	1.76‡	1.477	.425	3.47***	1.695	.413	4.10***
Property/contraband				-.020	.213	-0.10	.207	.263	0.79	.057	.227	0.25	.246	.243	1.01
Assault: inmate				-.150	.245	-0.61	.765	.281	2.72**	1.484	.260	5.70***	1.142	.257	4.44***
Assault: staff				-.146	.290	-0.50	.335	.305	1.10	1.319	.278	4.74***	.940	.307	3.06**
Prior misconduct Hx				-.034	.055	-0.63	-.016	.058	-0.27	-.137	.054	-2.54*	-.070	.055	-1.26
Quasi-legal Factors															
Offense of conviction[b]															
Drug	-.003	.042	-0.09	-.211	.254	-0.83	-.130	.290	-0.45	-.283	.266	-1.06	-.226	.261	-0.86
Property/financial	-.047	.046	-1.03	.020	.301	0.06	-.077	.351	-0.22	.047	.320	0.15	.093	.302	0.31
Public order/misd	-.071	.158	-.045	-2.28	.778	-2.94**	-2.40	1.154	-2.08*	-.967	.715	-1.35	-.921	.655	-1.41
Other	-.179	.059	-3.05**	-0.12	.463	-0.03	.703	.494	1.42	.077	.481	0.16	.165	.428	0.39
Prison job	-.092	.035	-2.67**	-.218	.218	-1.00	-.328	.231	-1.42	-.839	.210	-3.99**	-.524	.202	-2.59**
Program participatn	.223	.031	7.16***	-.113	.121	-0.53	-.133	.245	-0.54	-.464	.205	-2.26*	-.288	.221	-1.31
Time served	.438	.021	7.16***	-.035	.160	-.022	-.080	.193	-0.42	-.123	.165	-0.74	-.018	.177	-0.10
Prior incarceration	.179	.028	6.49***	.158	.165	0.96	.187	.187	1.00	.148	.171	0.86	.345	.168	2.06*
Extra-legal Factors															
Male	.058	.056	1.03	-.227	.292	-0.78	.369	.338	1.09	.167	.272	0.61	.048	.332	0.15
Race[c]															
Black	.049	.033	1.47	-.031	.205	-0.15	.018	.213	0.09	.012	.201	0.06	-.115	.206	-0.56
Hispanic	-.138	.043	-3.22***	.428	.327	1.31	.396	.375	1.06	.310	.336	0.92	.342	.342	1.00
Other	.041	.063	0.65	-.418	.325	-1.29	.321	.358	0.90	-.150	.323	-0.47	.025	.310	0.08
Controls															
Facility	.000	.000	0.42	.000	.001	0.05	-.006	.002	-3.7**	-.006	.001	-5.43**	.001	.001	0.81
Federal	-.563	.083	-6.76***	1.595	.652	2.45*	1.159	.751	1.54	3.25	.624	5.21***	2.14	.646	3.30***
Age	-.025	.002	-15.56***	-.014	.013	-1.09	-.009	.015	-0.63	.006	.013	0.44	-.009	.013	-0.67
Exclusion Restrictions															
Mental health scale															
1	.139	.042	3.32***												
2	.146	.047	3.09**												
3	.221	.054	4.13***												
4	.091	.102	0.90												

Negative affect	.298	.028	10.75***												
Suicide															
Only thought	.099	.044	2.27*												
Prior attempt	.224	.042	5.34***												
GED or HS diploma	.053	.027	1.98*												
Married	-.179	.035	-5.10***												
Inverse Mills Ratio				.319	.495	0.64	-.036	.554	-0.07	-.475	.492	-0.97	-.278	.519	-0.54
Constant	-.880	.117	-7.53***	2.663	.826	3.22***	2.828	.944	2.99**	4.4445	.846	5.26***	1.888	.892	2.12*
Psuedo R^2	.2020								.0839						
Wald χ^2	1748.64***								802.30***						
Psuedo log likelihood	-7119.0108								-5733.5264						

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05; [a] Reference: Disruptive behavior [b] Reference: Person [c] Reference: White [d] Reference: No Punishment (Sanction Category 1)

Looking at the third sanction category, a custody increase modification internal to the current facility, compared to the reference category of no punishment, it seems that the predictive ability of the legal, quasi-legal, and extra-legal factors is little improved. Representing a slight improvement over sanction category two, there is one legal factor that is significantly associated with likelihood of receiving a punishment option resulting in custody modification internal to the current facility. When comparing the misconduct category of committing an assault on a staff member to the reference category of disruptive behavior, holding the effect on the dependent variable of all legal, quasi-legal, and extra-legal factors constant, committing a staff assault significantly increases the likelihood (β=.765) that an inmate will receive a sanction in the punishment category of an increased modification to custody level internal to the current facility.

Results of the multinomial logistic regression equation for sanction category four (custody modification external to the facility and/or solitary confinement) suggest that multiple variables within the groups of legal and quasi-legal factors are significantly associated with likelihood of receiving this punishment outcome compared to the reference category of receiving no punishment. Consistent with the fully saturated Heckman ordered probit model presented in Table 19, the misconduct category of security/order violation is negatively associated with receiving sanction category four (β=-.805), while committing a drug/alcohol misconduct offense (β=1.477), and assault on either institutional staff (β=1.319) or another inmate (β=1.484) significantly increase the likelihood of receiving this punishment option. The second legal factor representing prior inmate misconduct history has a significant negative relationship with this punishment category, meaning that a more extensive misconduct history decreases the likelihood that

an inmate will receive the sanction category of custody modification external to current facility/solitary confinement. As was also established in the fully saturated Heckman ordered probit model, the quasi-legal factors of having a prison job and program participation are negatively associated with the category of the dependent variable (β=-.839 and β=-.464 respectively). By way of interpretation, this means that controlling for all other legal, quasi-legal, extra-legal, and control variables, having a job within the prison and involvement in programming significantly decrease the likelihood that an inmate will receive the disciplinary sanction of an external custody modification/placement in solitary confinement.

While we have already observed a difference in some of the unique relationship between independent variables and each category of the dependent variable of punishment option, these differences become even more pronounced when looking at the results of this analysis for the last category of the dependent outcome. Sanction category five represents the most severe punishment outcome as currently operationalized, that of receiving a new sentence resulting in a lengthening of the period of incarceration. Looking first at the legal factors, the same relationship between categories of the instant misconduct offense and dependent variable that has been observed for sanction category four is present in the results for sanction category five. There is a significant negative coefficient for security/order violations (β=-.764), and a significant positive coefficient for drug/alcohol misconduct (β=1.695), assault on institutional staff (β=.940), and assault on a fellow inmate (β=1.142). Interestingly though, prior inmate misconduct history again fails to achieve statistical significance in predicting the most severe punishment category in the multinomial model. Looking to the effect of the quasi-legal variables on

receiving this punishment option, the long established significant negative effects of maintaining a job within the prison remains for this punishment category (β=-.524). Finally, it is noteworthy that prior incarceration, a quasi-legal variable which has not previously emerged as having a significant relationship with either operationalization of the dependent variable is significantly (β=.345) associated with the likelihood of receipt of a new sentence. Interpreting this relationship suggests that holding all other factors constant, inmates who have been previously incarcerated are more likely than other inmates to be charged and convicted of a new crime or receive a sentence enhancement.

Conclusion

All of the analyses presented above in Tables 17 through 19 were designed to address the second hypothesis. Hypothesis two assumes that in a fully saturated model the majority of the legal and quasi-legal factors will be significant predictors of sanction outcome, while the relationship between the extra-legal factors and sanction outcome will be reduced to nonsignificance. By way of overview, Figure 2 presents a visual of the statistically significant relationships established in the analyses discussed above. While three different sets of analyses were undertaken to address this research hypothesis, a semi-consistent pattern of findings has emerged in the results of the three different fully saturated models.

Figure 2. Overview of Findings from Estimation Models – Hypothesis Two (Tables 17-19)

	DV1: Sanction Severity Scale – Ordered Logit (w/Heckman correction)	**DV 2: Punishment Categories – Series of Nested Probit Models (w/Heckman correction)**					**DV 2: Punishment Categories – Two-stage Multinomial Model (w/IMR as Covariate)[d]**			
	Sanction Severity Scale	**Category 1**	**Category 2**	**Category 3**	**Category 4**	**Category 5**	**Category 2**	**Category 3**	**Category 4**	**Category 5**
Legal Factors										
Most serious instant misconduct offense[a]										
Security/order viol	-		+	+	-	-			-	-
Drug/alcohol	+	-	-		+	+			+	+
Property/contraband										
Assault: inmate	+	-	-	-	+	+		+	+	+
Assault: staff	+	-	-		+	+			+	+
Prior misconduct Hx	-		+						-	
Quasi-legal Factors										
Offense of conviction[b]										
Drug										
Property/financial										
Public order/misdmr		+					-	-		
Other				+						
Prison job	-	+	+		-				-	-
Program participation	-		+		-				-	
Time served										
Prior incarceration						+				+

Extra-legal Factors											
Male			-	+							
Race[c]											
Black											
Hispanic											
Other			-	+							
Controls											
Facility		+	+		-	+		-	-		
Federal	+	-	-	-	+		+		+	+	
Age			-	-	+						

NOTES –
Blank cell indicates non-significance; All indicated positive or negative relationships $p \leq .05$
[a] Reference: Disruptive Behavior, [b] Reference: Violent, [c] Reference: White, Reference: Category 1 (No punishment received)

Compared to the reference category, four of the five categories of most serious misconduct offense are significantly associated with sanction severity as operationalized in both measures of the dependent variable. These include: security/order violation, drug/alcohol offense, assault of a fellow inmate, and assault of a staff member. While the directionality reflected in the specific coefficients changes across the three different models, the overall trend remains: Controlling for the effect of all other variables in the model, the less serious types of inmate misconduct (security/order violation and the reference category of disruptive behavior) tend to be associated with receiving a punishment in the lower end of the sanction severity scale, while the more serious types of inmate misconduct (drug/alcohol violations, assault) are associated with receiving a punishment in the higher end of the sanction severity scale. The second extra-legal factor, a variety scale reflecting prior history of inmate misconduct during the current period of incarceration, is not consistently associated with sanction severity throughout the models. This initial direct effect relationship presents initial evidence for the conclusion that misconduct type/severity has an effect on punishment type and severity.

A very strong trend is observed in the effect of the quasi-legal factors on sanction severity. These analyses consistently indicate that offense of conviction for the current incarceration, while highly significant in all the sample selection models predicting receiving a formal misconduct ticket, is not associated with sanction outcome as currently operationalized. This means that after accounting for the influence that offense of conviction has on receiving a formal misconduct ticket, it does not exert any additional statistical influence on punishment outcome post-disciplinary proceeding. The two variables representing engagement in prosocial activities within the prison setting, prison

job and program participation, consistently act to influence sanction severity in a negative direction. Looking across the directionality of these variables for all three different analyses, it is clear that the only two punishment categories which observe a positive relationship between these prosocial factors and punishment outcome are in the two nested Heckman probit models that predict receiving the two *least* severe punishment outcomes (receiving no formal punishment and modification of inmate privileges). Then while not at all consistently significant predictors of sanction outcome across all three analyses, there is somewhat of a trend within the nested Heckman probit models where the indicators of risk are positively associated with sanction severity. This means that, controlling for the effect of all other variables, having served a prior term of incarceration and having served more time in prison for the current period of incarceration are associated with more post-disciplinary severe sanction outcomes.

Finally, consistent with the second hypothesis, once all legal, quasi-legal, and control variables are introduced into the model with the previously significant (see Table 12) extra-legal factors, gender and race/ethnicity exert no significant effects on sanction severity. Taking all of this into consideration, the results of the models presented in Tables 17-19 offer strong and consistent support for the hypothesis that the legal and quasi-legal factors are significantly associated with sanction outcome, while the extra-legal factors are not.

CHAPTER 5

RESULTS: CONDITIONING EFFECTS OF EXTRA-LEGAL FACTORS

Overview

This chapter presents the results of analyses designed to address the second research question, which asks whether the extra-legal factors (inmate race/ethnicity and gender) condition the relationship between the legal and quasi-legal factors and punishment outcome. Addressing hypotheses three through five, this set of analyses uses two different statistical approaches to examine a potential conditioning effect. As an aside, for parsimony of model specification, race/ethnicity is dichotomized into non-white (=1) and white (=0) in the interactive models.

One of the most common ways to look at a conditioning relationship is to create an interaction term between the variables of interest and then include that interactive term into the regression model. This strategy helps to uncover a statistical moderating effect whereby the value of one variable influences the relationship between another independent variable and the dependent variable. Inclusion of interactive terms into the model are a preferred strategy to investigate conditioning relationships under certain circumstances. Following this strategy, a set of two-way interaction terms will be calculated and included as covariates in the models to examine whether those interaction terms attenuate the relationship between the legal and quasi-legal factors of interest and punishment outcome. The calculated two-way interaction terms include Gender (male=1) * Legal Factors and Race/ethnicity (non-white=1) * Legal Factors, as well as Gender (male=1) * Quasi-legal Factors and Race/ethnicity (non-white=1) * Quasi-legal Factors. An additional two-way interactive term between the two extra-legal factors, Gender *

Race/ethnicity, will also be included in a final two-way interactive model. Beyond the two-way interactions, one final interactive term will be calculated and inserted into the models, which looks at a three-way interaction of Gender * Race/ethnicity * Legal-factors. Additionally, all of the above models are estimated for both operationalizations of the dependent variable.

However, interactive terms are not the preferred method for analyses when the interactive terms are made of discrete (i.e., categorical) variables (Long, 1997), as is the case in this research. As such, the conditioning relationships are investigated using an alternative method in which the original direct effect equations are re-run on samples that are split based on the extra-legal factors. Using this strategy, it is possible to determine if the magnitude, significance level, and/or directionality of the relationships between punishment outcome and inmate characteristics differ based on the extra-legal factors of gender and race/ethnicity. With a split-sample methodology, in order to look at the effect of gender on the observed effect of the legal factors on sanction severity, the direct effects model will be re-run twice. First with all male inmates and then with all female inmates. The same method will be undertaken for the extra-legal factor of race/ethnicity by looking at split samples of non-white and white inmates. This split-sample strategy also provides an opportunity to look at the interaction between extra-legal factors. The two different strategies to explore the conditioning effect of the extra-legal factors on the legal factors outlined above are conducted with both operationalizations of the dependent variable – those being sanction severity and punishment categories.

Two-way Interaction Terms: Extra-legal and Legal Factors

The third hypothesis involves a potential conditioning effect of the two extra-legal variables (gender and race/ethnicity) on the relationship between the legal factors and punishment outcome. Each of the sets of analyses, inclusion of interactive terms and the split-sample models, are conducted for both operationalizations of the punishment outcome dependent variable.

Sanction Severity Outcome Variable

Gender * legal factors. Table 20 presents the results of the Heckman ordered probit model that includes the interaction terms between gender and the legal factors. In order to test the significance of the interactive term, both direct effects and interaction effects are included in the model. Results of this model indicate that there is no significant interaction between the legal factors and inmate gender in predicting sanction severity. The significant relationships between multiple of the categories of instant misconduct offense identified in the direct effects models (see overview Figure 2) remain unaffected once the interactive terms are included. Similarly, the interactive term between a prior history of inmate misconduct and male gender failed to reach statistical significance. Turning to the other non-interactive variables in this model, the significant negative relationship between the two quasi-legal factors representing prosocial inmate activities (having a prison job and program participation) remains robust to the inclusion of the Gender * Legal-factors interaction terms in this model (β=-.155 and -.098, respectively).

Table 20. Heckman Ordered Probit Model with Huber White Cluster Robust Standard Errors (based on 326 groups); Dependent Variable = Sanction Severity, Interactions = Male X Legal Factors

	Selection Model			Full Model		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.221	.149	-1.49
Drug/alcohol				.492	.257	1.92*
Property/contraband				.149	.126	1.18
Assault: inmate				.602	.127	4.73***
Assault: staff				.382	.144	2.66**
Prior misconduct History				.124	.033	0.73
2-way Interactions (Male * Legal Factors)						
Most serious instant misconduct offense[a]						
Security/order violation * M				-.117	.172	-0.68
Drug/alcohol * M				.155	.268	0.58
Property/contraband * M				-.072	.143	-0.50
Assault: inmate * M				-.101	.141	-0.72
Assault: staff * M				.081	.160	0.51
Prior misconduct Hx * M				-.051	.035	-1.47
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.023	0.45	-0.51	-0.31	.051	-0.61
Property/financial	-.096	.053	-1.82	.041	.060	0.68
Public order/misdemeanor	-.051	.180	-0.28	.117	.232	0.51
Other	-.185	.064	-2.89**	.051	.077	0.65
Prison job	-.103	.038	-2.71**	-.155	.043	-3.59***
Program participation	.227	.035	6.47***	-.098	.044	-2.24*
Time served	.491	.024	20.32***	-.020	.048	-0.42
Prior incarceration	.226	.030	7.50****	.066	.039	1.72
Extra-legal Factors						
Male	.068	.063	1.08	.236	.125	1.89
Non-white	.000	.034	0.01	-.005	.038	-0.14
Controls						
Facility	.000	.000	0.14	.000	.000	0.36
Federal	-.521	.094	-5.51***	.414	.098	4.23***
Age	-.028	.002	-15.33***	.002	.004	0.68
Exclusion Restrictions						
Mental health scale						
1	.139	.047	2.95**			
2	.189	.051	3.74***			
3	.250	.057	4.37***			
4	.151	.107	1.41			
Negative affect	.345	.031	11.14***			
Suicide						
Only thought about it	.102	.049	2.09*			
Prior attempt	.213	.045	4.79***			
GED or HS diploma	.059	.031	1.93*			
Married	-.204	.038	-5.32***			
Constant	-1.176	.126	-9.36***			
Rho	-.260	.138				

Cut 1	-1.615	.190	-8.50***
Cut 2	-.346	.198	-1.75
Cut 3	-.002	.206	-0.01
Cut 4	.915	.226	4.04***
AthRho	-.266	.148	-1.81
Wald χ^2	325.93***		
Psuedo log likelihood	-11810.10		
Wald test – independence of equations	$\chi^2 = 3.26$, p=0.0711		

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior, [b] Reference: Person

Non-white * legal factors. Table 21 shows the results of the Heckman ordered probit model with the interaction between the second extra-legal factor (a dichotomous indicator for non-white race/ethnicity) and the legal factors. As was seen in Table 20, the interactive terms between non-white race/ethnicity and the legal factors are also not significantly associated with sanction severity.

The same significant direct-effect relationships that have been consistent through nearly all models remain in this one. Of the instant misconduct offense categories, drug/alcohol misconduct (*ß*=.694) and the two assault categories of staff (*ß*=.369) and inmates (*ß*=.496) continue to have a significant positive effect on sanction severity, while security/order violations exert a significant negative effect on sanction severity (*ß*=-.413). The two prosocial inmate activities quasi-legal variables – having a prison job (*ß*=-.156) and program participation (*ß*=-.098) – are also still negatively related to sanction severity.

Table 21. Heckman Ordered Probit Model with Huber White Cluster Robust Standard Errors (based on 326 groups); Dependent Variable = Sanction Severity, Interactions = Non-white X Legal Factors

	Selection Model			Full Model		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.413	.123	-3.35***
Drug/alcohol				.694	.123	5.66***
Property/contraband				.017	.091	0.19
Assault: inmate				.496	.098	5.08***
Assault: staff				.369	.109	3.39***
Prior misconduct History				-.013	.019	-0.71
2-way Interactions (Non-white * Legal Factors)						
Most serious instant misconduct offense[a]						
Security/order violation * NW				.161	.159	1.01
Drug/alcohol * NW				-.071	.157	-0.45
Property/contraband * NW				.124	.111	1.12
Assault: inmate * NW				.043	.117	0.37
Assault: staff * NW				.131	.137	0.96
Prior misconduct Hx * NW				-.012	.022	-0.55
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.023	0.45	-0.51	-.034	.051	-0.67
Property/financial	-.096	.053	-1.82	.035	.060	0.59
Public order/misdemeanor	-.051	.180	-0.28	.122	.233	0.52
Other	-.185	.064	-2.89**	.049	.077	0.64
Prison job	-.103	.038	-2.71**	-.156	.043	-3.62***
Program participation	.227	.035	6.47***	-.098	.044	-2.22*
Time served	.491	.024	20.32***	-.019	.048	-0.39
Prior incarceration	.226	.030	7.58****	.068	.039	1.75
Extra-legal Factors						
Male	.070	.063	1.10	.098	.081	1.21
Non-white	.000	.034	0.01	-.043	.090	-0.48
Controls						
Facility	.000	.000	0.14	.000	.000	0.34
Federal	-.521	.094	-5.51***	.416	.098	4.25***
Age	-.028	.002	-15.33***	.002	.003	0.61
Exclusion Restrictions						
Mental health scale						
1	.139	.047	2.95**			
2	.189	.051	3.74***			
3	.250	.057	4.37***			
4	.151	.107	1.41			
Negative affect	.345	.031	11.14***			
Suicide						
Only thought about it	.102	.049	2.09*			
Prior attempt	.213	.045	4.79***			
GED or HS diploma	.059	.031	1.93*			
Married	-.204	.038	-5.32***			
Constant	-1.176	.126	-9.38***			
Rho	-.262	.136				
Cut 1				-1.763	.196	-9.02***
Cut 2				-.494	.202	-2.44*
Cut 3				-.150	.210	-0.72
Cut 4				.766	.229	3.34***
AthRho				-.268	.146	-1.84
Wald χ^2				333.53***		
Psuedo log likelihood				-11810.93		
Wald test – independence of equations				χ^2 = 3.38, p=0.0661		

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior, [b] Reference: Person

Punishment Categories Outcome Variable

Tables 22-23 show the results of a series of two-stage multinomial logistic regression models that control for sample selection by inclusion of the IMR (Inverse Mills Ratio) as a covariate. In these models, the punishment categories dependent variable is regressed on fully saturated models that include various interactive terms. Due to the complexity of including interactions among categorical variables in a multinomial logistic regression model, the interval-level ordered categorical independent variable of instant misconduct offense was operationalized as a continuous variable in this set of models.

Gender * legal factors and Race/ethnicity * legal factors. Looking at Tables 22 and 23, it is clear that the trend of non-significant interactive terms identified in the models for the first dependent variable, sanction severity, continues when operationalizing the dependent variable as separate punishment categories. Neither of the interactive terms between male gender and a more severe instant misconduct offense or a prior history of inmate misconduct are significantly related to any category of the punishment outcome. Similarly, neither the interaction terms between non-white race/ethnicity and more severe instant misconduct offense or prior history of inmate misconduct are significantly related to any category of the punishment outcome.

Table 22. Two-stage Multinomial Model (Controlling for Sample Selection with IMR), with Cluster Robust Standard Errors (321 clusters)
Dependent Variable = Punishment Categories, Interactions = Male X Legal Factors

	Stage 1: Probit Model			Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)											
	Selection Model			Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	β	SE	z	β	SE	z	β	SE	z	β	SE	z	β	SE	z
Legal Factors															
Seriousness of misconduct[a]				.039	.101	0.39	.229	.130	1.76	.369	.117	3.16**	.248	.104	2.38**
Prior misconduct Hx				-.109	.135	-0.80	-.062	.132	-0.47	-.112	.124	-0.90	-.034	.128	-0.27
Interactions															
Seriousness * M				-.081	.117	-0.69	-.154	.146	-1.06	-.080	.130	-0.62	-.043	.121	-0.35
Seriousness * NW															
Prior misconduct Hx*M				.078	.141	0.55	.031	.141	0.22	-.016	.131	-0.12	-.047	.135	-0.34
Prior misconduct Hx*NW															
Quasi-legal Factors															
Offense of conviction[b]															
Drug	-.01	.042	-0.11	-.215	.252	-0.85	-.105	.201	-0.36	-.248	.264	-0.94	-.188	.260	-0.72
Property/financial	-.05	.046	-1.01	.009	.296	0.03	-.049	.340	-0.14	.075	.316	0.24	.141	.297	0.47
Public order/misdemeanor	-.08	.158	-0.50	-2.31	.787	-2.9**	-2.36	1.158	-2.05*	-.878	.707	-1.24	-.856	.667	-1.28
Other	-.19	.059	-3.37***	-.062	.458	-0.14	.689	.489	1.41	.063	.477	0.13	.193	.424	0.46
Prison job	-.08	.035	-2.41*	-.260	.225	-1.15	-.356	.238	-1.49	-.877	.214	-4.09**	-.565	.210	-2.69**
Program participation	.224	.031	7.12***	-.066	.208	-0.32	-.110	.242	-0.45	-.470	.200	-2.35*	-.278	.214	-1.30
Time served	.438	.021	21.16***	.087	.158	0.55	-.008	.187	-0.05	-.033	.159	-0.21	.106	.170	0.62
Prior incarceration	.187	.028	6.73***	.202	.165	1.23	.205	.187	1.09	.165	.172	0.96	.372	.168	2.21*
Extra-legal Factors															
Male	.056	.056	0.99	-.118	.421	-0.28	.819	.550	1.49	.485	.451	1.08	.305	.475	0.64
Non-white	-.00	.032	-0.06	-.005	.186	-0.03	.125	.200	0.63	.134	.184	0.73	.030	.186	0.16
Controls															
Facility	.000	.000	-0.03	.000	.001	0.22	-.006	.002	-3.54**	-.006	.001	-5.18**	.002	.001	1.11
Federal	-.55	.084	-6.52***	1.435	.640	2.24*	1.042	.736	1.41	3.120	.596	5.23***	1.984	.621	3.20***
Age	-.02	.002	-15.36**	-.023	.013	-1.75	-.014	.015	-0.96	-.002	.013	-0.15	-.017	.014	-1.27

Exclusion Restrictions															
Mental health scale															
1	.140	.042	3.33***												
2	.145	.047	3.07**												
3	.226	.054	4.21***												
4	.098	.102	0.96												
Negative affect	.306	.028	11.11***												
Suicide															
Only thought about it	.099	.044	2.26*												
Prior attempt	.219	.042	5.23***												
GED or HS diploma	.064	.027	2.39*												
Married	-.20	.035	-5.59***												
Inverse Mills Ratio				.687	.468	1.47	.170	.528	0.32	-.284	.454	-0.62	.011	.476	0.02
Constant	-.88	.117	-7.48***	2.180	.826	2.64**	2.110	.995	2.12*	3.329	.834	3.99***	.918	.877	1.05
Psuedo R^2	.2003								.0665						
Wald χ^2	1719.92***								630.54***						
Psuedo log likelihood	-7134.1186								-5842.9096						

NOTES –

*** p ≤.001, ** p≤.01, * p≤.05

[a] Operationalized as continuous variable

[b] Reference: Person

Table 23. Two-stage Multinomial Model (Controlling for Sample Selection with IMR), with Cluster Robust Standard Errors (321 clusters)
Dependent Variable = Punishment Categories, Interactions = Non-white X Legal Factors

	Stage 1: Probit Model			**Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)**											
	Selection Model			**Sanction Category 2**			**Sanction Category 3**			**Sanction Category 4**			**Sanction Category 5**		
	β	**SE**	**z**	**β**	**SE**	**z**	**β**	**SE**	**z**	**β**	**SE**	**z**	**β**	**SE**	**z**
Legal Factors															
Seriousness of misconduct[a]				-.047	.076	-0.63	.029	.094	0.31	.267	.082	3.27***	.140	.086	1.63
Prior misconduct Hx				.013	.088	0.15	.024	.103	0.24	-.047	.089	-0.53	-.004	.099	-0.04
Interactions															
Seriousness * M															
Seriousness * NW				.038	.101	0.37	.111	.115	0.97	.063	.111	0.57	.116	.114	1.03
Prior misconduct Hx*M															
Prior misconduct Hx*NW				-.094	.109	-0.86	-.099	.121	-0.82	-.131	.107	-1.22	-.118	.109	-1.08
Quasi-legal Factors															
Offense of conviction[b]															
Drug	-.01	.042	-0.11	-.220	.253	-0.87	-.121	.290	-0.42	-.260	.264	-0.99	-.198	.260	-0.76
Property/financial	-.05	.046	-1.01	.011	.298	0.04	-.062	.348	-0.18	.069	.318	0.22	.132	.298	0.44
Public order/misdemeanor	-.080	.158	-0.50	-2.30	.776	-2.96*	-2.33	1.156	-2.02*	-.857	.705	-1.22	-.837	.664	-1.26
Other	-.19	.059	-3.37***	-.054	.456	-0.12	.697	.488	1.43	.069	.476	0.15	.198	.423	0.47
Prison job	-.08	.035	-2.41*	-.259	.225	-1.15	-.355	.238	-1.49	-.877	.214	-4.09**	-.567	.210	-2.70**
Program participation	.224	.031	7.12***	-.067	.208	-0.32	-.111	.242	-0.46	-.474	.201	-2.36*	-.283	.215	-1.31
Time served	.438	.021	21.16***	.085	.158	0.54	-.011	.188	-0.06	-.036	.159	-0.22	.103	.171	0.60
Prior incarceration	.187	.028	6.73***	.204	.166	1.23	.211	.189	1.12	.166	.173	0.96	.376	.169	2.23*
Extra-legal Factors															
Male	.056	.056	0.99	-.224	.294	-0.76	.377	.338	1.11	.193	.270	0.72	.094	.331	0.28
Non-white	-.002	.032	-0.06	.088	.354	0.25	-.027	.407	-0.07	.243	.399	0.61	-.110	.394	-0.28
Controls															
Facility	.000	.000	-0.03	.000	.001	0.22	-.006	.002	-3.54**	-.006	.001	-5.16**	.002	.001	1.09

Federal	-.55	.084	-6.52***	1.436	.641	2.24*	1.054	.737	1.43	3.125	.598	5.23***	1.992	.623	3.20***
Age	-.02	.002	-15.36**	-.022	.013	-1.72	-.015	.529	0.29	-.301	.456	-0.66	-.017	.014	-1.27
Exclusion Restrictions															
Mental health scale															
1	.140	.042	3.33***												
2	.145	.047	3.07**												
3	.226	.054	4.21***												
4	.098	.102	0.96												
Negative affect	.306	.028	11.11***												
Suicide															
Only thought about it	.099	.044	2.26*												
Prior attempt	.219	.042	5.23***												
GED or HS diploma	.064	.027	2.39*												
Married	-.195	.035	-5.59***												
Inverse Mills Ratio				.683	.467	1.46	.156	.529	0.29	-.301	.456	-0.66	-.009	.476	-0.02
Constant	-.877	.117	-7.48***	2.199	.838	2.62**	2.614	.966	2.70**	3.521	.834	4.22***	1.228	.885	1.39
Psuedo R^2	.2003								.0665						
Wald χ^2	1719.92***								553.22***						
Psuedo log likelihood	-7134.1186								-5842.7739						

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Operationalized as continuous variable
[b] Reference: Person

Split-sample Models: Extra-legal Factors Conditioning Direct Effects of Legal Factors on Punishment Outcome

As discussed at the beginning of this chapter, the results presented above and in Tables 20-23 all take the first approach to examining a potential conditioning effect of the extra-legal factors on the relationship between the legal-factors and punishment outcome; they include statistical interactive terms between the extra-legal and legal factors as covariates in the multivariate models to examine the direct effect between legal factors and punishment outcome controlling for that potential interactive effect. Yet, this approach is not always the most appropriate method of modeling conditioning effects, especially when one or both variables included in the interaction are categorical (or dictohomous, as that is a special case of a categorical variable with only two categories). Therefore, in order to examine the conditioning effects of our two dichotomous extra-legal variables on the other relationships, the split-sample technique discussed in Chapter 3 and above will be employed to conduct analyses reported in Tables 24-27.

Sanction Severity Scale Outcome Variable

Male – female inmate split samples. Table 24 presents the results of the fully-saturated Heckman ordered probit direct effects model conducted on subsamples split by gender.[22] This set of split-sample models is the second method by which hypothesis three, regarding the conditioning effect of the extra-legal factors on the relationship between the legal factors and punishment outcome, is investigated. With the nature of

[22] While not the focus of the current research, a look at the sample selection models between genders suggests there are significant differences in the effect that the independent variables, control variables, and exclusion restrictions have on selection into the estimation subsample of interest.

this model conducted on samples split by gender, relationships between the independent variables and sanction severity that are conditional on gender will be identified when comparing the magnitude of the standardized coefficients and significance level between the male and female inmate subsamples. If the magnitude and/or significance level of the relationships differs between the gender-based subsamples, for example, it lends support to the conclusion that the relationships between those independent variables and the dependent variable are conditioned by inmate gender.

Looking to the legal factors on Table 24, there are some clear differences between both the magnitude of the standardized coefficients and the significance level of the relationships between the two legal factors and sanction severity. For males, the pattern of relationships that has been observed previously throughout all saturated multivariate analyses exists between the categories of inmate misconduct and sanction severity. The misconduct offense of security/order violations maintains a significant negative relationship with sanction severity (β=-.344), while drug/alcohol misconduct (β=.652), assault on institutional staff (β=.471), and assault on fellow inmates (β=.505) all maintain a significant positive relationship with sanction severity. When looking at the same variable (categories of instant misconduct offense) among female inmates, however, the results indicate that only the most serious categories of misconduct – assault on fellow inmates (β=.597) and assault on institutional staff (β=.382) – are significantly associated with severity of sanction outcome. Additionally, the effect of prior inmate misconduct history on sanctions severity is significant (and negative) for male inmates (β=-.028) but not for female inmates. However, the magnitude of the significant relationship for the male inmate subsample is very small and not in the expected direction. Significant

differences in magnitude and significance level of relationships for the quasi-legal and extra-legal variables will be discussed in a later section on hypothesis four.

Non-white – white inmate split samples. Table 25 contains the results of the Heckman ordered probit direct effects model conducted on the sample split by non-white versus white race/ethnicity. When looking at the legal factor of severity of instant misconduct offense, relationships do not differ much between the non-white and white inmate subsamples. Committing a security/order misconduct offense maintains the previously established significant negative relationship with sanction severity for both non-white (β=-.250) and white inmates (β=-.415), with the standardized coefficient indicating the magnitude of the relationship is larger for white inmates than non-white inmates. Drug/alcohol violations (non-white β=.626, white β=.685), assault on a fellow inmate (non-white β=.548, white β=.481), and assault on institutional staff (non-white β=.510, white β=.357) are all significantly related to sanction severity across both race/ethnicity-based subsamples, with the magnitude of those relationships remaining consistent across both racial/ethnic subsamples as well. Interestingly, the misconduct offense category of a property or contraband violation, which has had a non-significant relationship with sanction severity throughout the majority of the prior analyses, has a significant positive relationship with sanction severity for non-white inmates (β=.140), but not for white inmates. Finally, prior misconduct history has a significant negative relationship with sanction severity (β=-.027) for non-white inmates but not white inmates. Yet, as was the case in the results of the gender-based split-sample analysis presented in Table 24, the magnitude of this significant relationship is very small such that, holding the effect of all other variables in the model constant, a one unit increase in

the prior inmate misconduct offense variable results in a decrease of less than .03 probit units on the sanction severity scale. Significant differences in magnitude and significance level of relationships for the quasi-legal and extra-legal variables also will be discussed later.

Punishment Categories Outcome Variable

Male – female inmate split samples. The results of the split-sample multinomial models (with the IMR included as a covariate) that examine the effect of gender on the relationship of the legal factors on the dependent variable when operationalized as separate punishment categories are presented in Tables 26.1 and 26.2. There is a significant positive relationship with a similar magnitude between the legal variable of severity of instant misconduct offense and the most severe punishment categories, external custody transfer/solitary confinement and modification of original sentence, for both the male (β=.285 and .200, respectively) and female (β=.389 and .280, respectively) inmate sub-samples. The second extra-legal variable, prior inmate misconduct history, has a nearly non-significant relationship with all punishment categories for both genders, with the exception of sanction category four (external transfer/solitary confinement) for female inmates (β=-.129). Strangely, but consistent with prior findings in this study, this significant relationship is negative, suggesting that those female inmates who have more extensive misconduct histories are less likely to receive an external custody transfer or solitary confinement as their punishment. Again, the relationship between quasi-legal factors and the punishment categories outcome variable will be discussed later.

Table 24. Heckman Ordered Probit Model with Huber White Cluster Robust Standard Errors
Dependent Variable = Sanction Severity, Split-sample Direct Effects Models by Gender

	Male Inmates		Female Inmates	
	Selection Model	**Estimation Model**	**Selection Model**	**Estimation Model**
	***β*(SE)**	***β*(SE)**	***β*(SE)**	***β*(SE)**
Legal Factors				
Most serious instant misconduct offense[a]				
Security/order violation		-.344(.085)***		-.186(.144)
Drug/alcohol		.652(.072)***		.408(.235)
Property/contraband		.078(.065)		.162(.114)
Assault: inmate		.505(.063)***		.597(.122)***
Assault: staff		.471(.071)***		.382(.141)**
Prior misconduct Hx		-.028(.012)*		.012(.033)
Quasi-legal Factors				
Offense of conviction[b]				
Drug	-.009(.051)	-.030(.055)	-.011(.109)	-.019(.134)
Property/financial	-.096(.058)	.078(.069)	-.041(.126)	-.063(.134)
Public order/misdemeanor	.092(.196)	.231(.243)	-.692(.425)	-.554(.611)
Other	-.183(.072)*	.035(.085)	-.132(.138)	.129(.185)
Prison job	-.140(.04)***	-.162(.050)***	.046(.083)	-.128(.091)
Program participation	.253(.040)***	-.070(.049)	.116(.072)	-.244(.122)*
Time served	.490(.027)***	-.014(.057)	.512(.053)***	-.076(.081)
Prior incarceration	.218(.034)***	.071(.044)	.253(.065)***	.041(.083)
Extra-legal Factors				
Non-white	-.018(.038)	.011(.042)	.066(.075)	-.076(.095)
Controls				
Facility	.000(.000)	.000(.000)	-.001(.001)	-.000(.000)
Federal	-.452(.11)***	.397(.105)***	-.706(.19)***	.555(.229)*
Age	-.028(.00)***	.002(.004)	-.030(.00)***	.007(.007)
Exclusion Restrictions				
Mental health scale				
1	.191(.054)***		.029(.094)	
2	.226(.066)***		.133(.077)	
3	.191(.067)**		.303(.110)**	
4	.200(.158)		.061(.140)	
Negative affect	.302(.035)***		.488(.064)***	
Suicide				
Only thought about it	.111(.055)*		.085(.106)	
Prior attempt	.171(.059)**		.243(.063)***	
GED or HS diploma	.083(.035)*		-.039(.061)	
Married	-.192(.04)***		-.237(.07)***	
Constant	-.148(.13)***		-.983(.23)***	
Rho	-.245(.166)		-.453(.195)	
Cut 1		-1.73(.21)***		-2.12(.38)***
Cut 2		-.529(.218)*		-.653(.390)
Cut 3		-.160(.229)		-.414(.398)
Cut 4		.794(.255)**		.316(.415)
AthRho		-.250(.177)		-.488(.245)*
Wald χ^2	281.55***		54.43***	
Psuedo log likelihood	-9511.569		-2244.035	
Wald test	χ^2 = 1.99, p=0.1580		χ^2 = 3.97, p=0.0464	

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior, [b] Reference: Person

Table 25. Heckman Ordered Probit Model with Huber White Cluster Robust Standard Errors
Dependent Variable = Sanction Severity, Split-sample Direct Effects Models by Race/ethnicity

	Non-White Inmates		White Inmates	
	Selection Model	**Estimation Model**	**Selection Model**	**Estimation Model**
	***β*(SE)**	***β*(SE)**	***β*(SE)**	***β*(SE)**
Legal Factors				
Most serious instant misconduct offense[a]				
Security/order violation		-.250(.095)**		-.415(.12)***
Drug/alcohol		.626(.088)***		.685(.125)***
Property/contraband		.140(.070)*		.017(.089)
Assault: inmate		.548(.068)***		.481(.101)***
Assault: staff		.510(.080)***		.357(.108)***
Prior misconduct Hx		-.027(.014)*		-.009(.019)
Quasi-legal Factors				
Offense of conviction[b]				
Drug	-.065(.054)	-.035(.058)	.092(.077)	-.038(.085)
Property/financial	-.169(.063)**	.061(.074)	.055(.089)	-.019(.104)
Public order/misdemeanor	-.224(.206)	-.232(.314)	.175(.286)	.463(.323)
Other	-.230(.077)**	.102(.101)	-.076(.108)	-.053(.132)
Prison job	-.091(.042)*	-.139(.052)**	-.126(.061)*	-.176(.073)
Program participation	.236(.041)***	-.116(.050)*	.218(.053)***	-.070(.068)
Time served	.486(.027)***	-.006(.050)	.504(.030)***	-.069(.074)
Prior incarceration	.219(.037)***	.076(.045)	.229(.051)***	.048(.064)
Extra-legal Factors				
Male	.058(.075)	.212(.094)	.108(.073)	.051(.095)
Controls				
Facility	-.000(.000)	.000(.000)	.000(.000)	-.000(.000)
Federal	-.473(.10)***	.357(.106)***	-.646(.13)***	.605(.136)***
Age	-.028(.00)***	.002(.004)	-.028(.00)***	.003(.005)
Exclusion Restrictions				
Mental health scale				
1	.176(.056)**		.093(.070)	
2	.201(.065)**		.186(.072)**	
3	.322(.083)***		.178(.077)*	
4	.061(.170)		.208(.133)	
Negative affect	.372(.034)***		.282(.054)***	
Suicide				
Only thought about it	.199(.065)**		-.015(.075)	
Prior attempt	.222(.060)***		.187(.070)**	
GED or HS diploma	.086(.033)**		-.024(.063)	
Married	-.16(.046)***		-.28(.066)***	
Constant	-1.16(.16)***		-1.22(.19)***	
Rho	-.259(.149)		-.336(.196)	
Cut 1		-1.61(.20)***		-2.08(.26)***
Cut 2		-.346(.207)		-.802(.292)**
Cut 3		.005(.216)		-.472(.300)
Cut 4		.943(.236)***		.393(.337)
AthRho		-.265(.159)		-.349(.221)
Wald χ^2	207.55***		155.30***	
Psuedo log likelihood	-8025.428		-3811.13	
Wald test – independence of equations	$\chi^2 = 2.76$, p=0.0964		$\chi^2 = 2.50$, p=0.1141	

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior, [b] Reference: Person

Table 26.1. Two-stage Multinomial Model (Controlling for Sample Selection with IMR), with cluster robust standard errors (69 clusters)
Dependent Variable = Punishment Categories, Split-sample Direct Effects Models by Gender

	Female Inmates														
	Stage 1: Probit Model			Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)											
	Selection Model			Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	β	SE	z	β	SE	z	β	SE	z	β	SE	z	β	SE	z
Legal Factors															
Seriousness of misconduct[a]				.049	.108	0.46	.222	.130	1.71	.389	.124	3.13**	.280	.109	2.56**
Prior misconduct Hx				-.093	.172	-0.54	.007	.162	0.04	-.108	.164	-0.66	-.038	.165	-0.23
Quasi-legal Factors															
Prison job	.198	.078	2.53*	-.445	.571	-0.78	-1.074	.519	-2.07*	-1.080	.555	-1.95*	-.631	.482	-1.31
Program participation	.474	.070	6.74***	-.299	.722	-0.41	-.242	.846	-0.29	-.853	.724	-1.18	.833	.786	-1.06
Prior incarceration	.130	.058	2.26*	.530	.447	1.19	.376	.469	0.80	.286	.455	0.63	.680	.426	1.60
Extra-legal Factors															
Non-white	.152	.064	2.38*	-.348	.441	-0.79	.036	.512	0.07	-.226	.475	-0.47	-.329	.491	-0.67
Controls															
Facility	-.001	.001	-2.09*	-.001	.003	-0.48	-004	.003	-1.46	-.006	.003	-2.29*	-.001	.003	-0.30
Federal	-.575	.142	-4.06***	1.817	1.146	1.59	1.912	1.355	1.41	3.137	.976	3.21***	2.279	1.206	1.89
Age	-.013	.003	-5.11***	-.013	.020	-0.66	.021	.027	0.77	-.003	.023	-0.15	-.011	.022	-0.48
Exclusion Restrictions															
Mental health scale															
1	.088	.062	1.42												
2	.141	.079	1.78												
3	.310	.090	3.46***												
4	-.129	.122	-1.06												
Negative affect	.356	.055	6.43***												
Suicide															
Only thought about it	.178	.087	2.04*												
Prior attempt	.311	.066	4.78***												
GED or HS diploma	.116	.056	2.07*												
Married	-.269	.064	4.78***												
Inverse Mills Ratio				.599	.694	0.86	.360	.761	0.47	-.132	.716	-0.18	-.121	.713	-0.17
Constant	-.322	.183	-1.76	2.864	1.643	1.74	.836	1.847	0.45	3.672	1.650	2.22*	2.285	1.890	1.21
Psuedo R^2	0.1361									0.610					
Wald χ^2	379.54***									475.17***					
Psuedo log likelihood	-1798.7368									-1048.8338					

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Operationalized as continuous variable
[b] Reference: Person

Table 26.2. Two-stage Multinomial Model (Controlling for Sample Selection with IMR), with cluster robust standard errors (69 clusters)
Dependent Variable = Punishment Categories, Split-sample Direct Effects Models by Gender

	Male Inmates														
	Stage 1: Probit Model			Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)											
	Selection Model			Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	β	SE	z	β	SE	z	β	SE	Coef	β	z	β	β	Coef	SE
Legal Factors															
Seriousness of misconduct[a]				-.045	.057	-0.80	.070	.062	1.14	.285	.057	5.03***	.200	.192	3.23***
Prior misconduct Hx				-.029	.055	-0.53	-.036	.060	-0.59	-.129	.055	-2.34*	-.079	.056	-1.40
Quasi-legal Factors															
Prison job	.049	.041	1.22	-.224	.238	-0.94	-.274	.255	-1.07	-.872	.224	-3.90***	-.552	.224	-2.47*
Program participation	.509	.035	14.74***	-.059	.204	-0.29	-.080	.238	-0.34	-.379	.190	-2.00*	-.203	.206	-0.98
Prior incarceration	.158	.029	5.44***	.114	.170	0.67	.229	.191	1.20	.210	.177	1.19	.313	.176	1.78
Extra-legal Factors															
Non-white	.080	.035	2.26*	.108	.198	0.54	.153	.204	0.75	.202	.187	1.08	.122	.192	0.64
Controls															
Facility	.000	.000	0.05	.001	.001	0.53	-.006	.002	-3.16**	-.005	.001	-4.46***	.002	.002	1.48
Federal	-.483	.105	-4.61***	1.453	.699	2.08*	.681	.809	0.84	3.037	.652	4.66***	1.992	.666	2.99**
Age	-.007	.002	-4.02***	-.019	.009	-2.05*	-.020	.011	-1.88	-.005	.008	-0.63	-.012	.009	-1.33
Exclusion Restrictions															
Mental health scale															
1	.171	.045	3.82***												
2	.118	.052	2.28*												
3	.130	.062	2.11*												
4	.265	.127	2.09*												
Negative affect	.243	.028	8.72***												
Suicide															
Only thought about it	.141	.045	3.14**												
Prior attempt	.208	.050	4.12***												
GED or HS diploma	.156	.028	5.66***												
Married	-.286	.038	-7.56***												
Inverse Mills Ratio				.428	.276	1.55	.201	.313	0.64	-.163	.268	-0.61	-.239	.291	-0.82
Constant	-.393	.122	-3.21***	2.095	.598	3.50***	2.923	.711	4.11***	3.354	.557	6.02***	1.254	.588	2.13*
Psuedo R^2	0.0720								0.0627						
Wald χ^2	704.87***								379.72***						
Psuedo log likelihood	-6687.1747								-4792.912						

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Operationalized as continuous variable
[b] Reference: Person

Table 27.1. Two-stage Multinomial Model (Controlling for Sample Selection with IMR), with cluster robust standard errors (297 clusters)
Dependent Variable = Punishment Categories, Split-sample Direct Effects Models by Race/ethnicity

	White Inmates														
	Stage 1: Probit Model			Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)											
	Selection Model			Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	β	SE	z	β	SE	z	β	SE	Coef	β	z	β	β	Coef	SE
Legal Factors															
Seriousness of misconduct[a]				-.045	.078	-0.57	.025	.095	0.27	.272	.084	3.24***	.145	.088	1.65
Prior misconduct Hx				.017	.091	0.19	.056	.104	0.54	-.026	.092	-0.28	-.001	.095	-0.01
Quasi-legal Factors															
Prison job	.065	.055	1.18	-.117	.323	-0.36	-.170	.363	-0.47	-.949	.326	-2.91**	-.544	.326	-1.67
Program participation	.492	.045	10.88***	.125	.331	0.38	.202	.373	0.54	-.353	.300	-1.18	-.041	.326	-0.12
Prior incarceration	.129	.043	3.02**	.147	.256	0.57	.525	.287	1.83	.288	.275	1.05	.307	.263	1.17
Extra-legal Factors															
Male	.362	.067	5.41***	-.484	.344	-1.41	.405	.427	0.95	-.082	.364	-0.23	-.155	.391	-0.40
Controls															
Facility	-.000	.000	-0.38	-.000	.002	-0.32	-.005	.002	-2.25*	-.005	.002	-2.72**	.000	.002	0.02
Federal	-.644	.111	-5.80***	13.973	.474	29.50***	13.052	.777	16.79***	15.316	.480	31.90***	14.599	.478	30.56***
Age	-.007	.002	-3.34***	-.018	.012	-1.49	-.024	.015	-1.61	-.010	.012	-0.80	-.016	.012	-1.31
Exclusion Restrictions															
Mental health scale															
1	.122	.054	2.24*												
2	.107	.061	1.75												
3	.159	.070	2.28*												
4	.282	.117	2.42*												
Negative affect	.183	.044	4.14***												
Suicide															
Only thought about it	.107	.060	1.79												
Prior attempt	.231	.059	3.93***												
GED or HS diploma	.115	.053	2.18*												
Married	-.380	.053	-7.17***												
Inverse Mills Ratio				.534	.484	1.10	.736	.528	1.39	.095	.493	0.19	-.076	.499	-0.15
Constant	-.596	.151	-3.94***	2.499	.095	2.63**	1.652	1.034	1.60	2.988	.936	3.19***	1.905	.992	1.92*
Psuedo R^2	.0952								.0592						
Wald χ^2	422.85***								4015.23***						
Psuedo log likelihood	-2816.0639								-1890.5968						

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Operationalized as continuous variable
[b] Reference: Person

Table 27.2. Two-stage Multinomial Model (Controlling for Sample Selection with IMR), with cluster robust standard errors (326 clusters)
Dependent Variable = Punishment Categories, Split-sample Direct Effects Models by Race/ethnicity

	Non-white Inmates														
	Stage 1: Probit Model			Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)											
	Selection Model			Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	β	SE	z	β	SE	z	β	SE	Coef	β	z	β	β	Coef	SE
Legal Factors															
Seriousness of misconduct[a]				-.012	.065	-0.18	.137	.068	2.02*	.328	.068	4.82***	.252	.071	3.56***
Prior misconduct Hx				-.078	.068	-1.15	-.092	.068	-1.35	-.188	.065	-2.89**	-.120	.067	-1.79
Quasi-legal Factors															
Prison job	.092	.041	2.25*	-.317	.293	-1.08	-.454	.302	-1.50	-.876	.268	-3.23***	-.566	.270	-2.10*
Program participation	.514	.035	14.35***	-.219	.268	-0.82	-.302	.300	-1.00	-.540	.262	-2.06*	-.460	.271	-1.70
Prior incarceration	.162	.031	5.28***	.242	.194	1.25	.129	.221	0.58	.187	.200	0.93	.426	.198	2.16*
Extra-legal Factors															
Male	.341	.062	5.54***	-.076	.358	-0.21	.357	.399	0.90	.296	.329	0.90	.246	.393	0.63
Controls															
Facility	-.000	.000	-0.53	.001	.001	0.55	-.006	.002	-3.29***	-.006	.001	-4.44***	.002	.002	1.49
Federal	-.462	.092	-5.00***	1.170	.636	1.84	.945	.724	1.31	2.819	.580	4.86***	1.661	.616	2.70**
Age	-.009	.002	-5.07***	-.017	.012	-1.47	-.009	.013	-0.68	-.002	.012	-0.14	-.009	.012	-0.75
Exclusion Restrictions															
Mental health scale															
1	.158	.046	3.45***												
2	.147	.058	2.55**												
3	.257	.072	3.59***												
4	-.089	.134	-0.66												
Negative affect	.314	.029	10.75***												
Suicide															
Only thought about it	.181	.051	3.59***												
Prior attempt	.269	.054	5.00***												
GED or HS diploma	.153	.028	5.47***												
Married	-.218	.042	-5.26***												
Inverse Mills Ratio				.461	.312	1.48	-.018	.352	-0.05	-.277	.305	-0.91	-.274	.326	-0.84
Constant	-.602	.126	-4.80***	2.296	.596	3.85***	2.778	.715	3.89***	3.468	.601	5.77***	1.044	.670	1.56
Psuedo R^2	0.0880								0.0695						
Wald χ^2	755.44***								369.14***						
Psuedo log likelihood	-5709.2375								-3950.7485						

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Operationalized as continuous variable
[b] Reference: Person

Non-white – white inmate split samples. The results of the final analysis to address hypothesis three are presented in Table 27.1 and 27.2, where the direct effects Heckman ordered probit model is modeled on the non-white and white inmate sub-samples. Results suggest that there are significant differences between non-white and white inmates in the magnitude and significance of the effects of severity of misconduct offense on likelihood of receiving specific punishment categories. For the white inmate sub-sample, severity of instant misconduct offense has a significant positive relationship with only sanction category four (external transfer/solitary confinement; β=.272). For non-white inmates, however, this same severity of instant misconduct offense variable is significantly related to almost all punishment categories. With the exception of the least severe category of modification of privileges, misconduct severity significantly affects sanction category three (β=.137), sanction category four (β=.328), and sanction category five (β=.252) for non-white inmates. With one exception, the extent of prior inmate misconduct has a consistently insignificant effect on likelihood of receiving each punishment category for both race/ethnicity sub-samples. Results indicate that when non-white inmates have a more extensive prior misconduct history, they are significantly less likely to receive the disciplinary sanction of external custody transfer/solitary confinement (β=-.188).

Conclusion – Hypothesis Three

Taken together, all the analyses discussed thus far in Chapter 4 (and reported in Tables 20-27) have been undertaken to address hypothesis three, which states that the extra-legal factors will condition the relationship between the legal-factors and punishment outcome. By way of review, two types of analyses were conducted on both

punishment outcome variables – the sanction severity scale and the punishment categories variable. The first of these strategies (Tables 20-21 and 22-23) involved calculating statistical interaction terms (extra-legal by legal factors) and including those as covariates in the multivariate models, while the second strategy (Tables 24-25 and 26-27) involved re-estimating direct effects models on sub-samples split by (1) gender and (2) race/ethnicity.

Results of the models using the interaction term strategy uniformly find that the calculated interaction terms are not significantly associated with either the sanction severity outcome variable or the punishment categories outcome variable. Findings of these analyses indicate that the same pattern of significant and non-significant direct effects between the legal factors and the outcome variables of sanction severity and receiving specific punishment categories remain significant even after the inclusion of the interaction terms into the multivariate models. Of course, this finding of non-significant interaction terms must be taken with the proverbial "grain of salt," as the calculated interaction terms include at least one categorical variable, which is not the ideal situation for this statistical technique. As such, we turn to the results of the split-sample models.

Results of the first split-sample model where the direct effects model was re-estimated on the sample split by inmate gender lead to a different conclusion than do the interaction-term models. Table 24 reports that the significance level and directionality of effects of the legal factor of instant misconduct offense categories on sanction severity differs by inmate gender. For male inmates, the same pattern of results that was observed in the fully-saturated models for research question one remains – the more serious misconduct categories (assault on inmates and staff, drug/alcohol misconduct) are

positively associated with sanction severity while the less serious misconduct categories (security/order violation, property/contraband offense) are either negatively or non-significantly associated with increased sanction severity. For female inmates, on the other hand, only the most severe categories of misconduct – the two assault categories - are significant, and those relationships are positive. As was also discussed previously, the prior misconduct history variety score is not associated with increased sanction severity for female inmates but it is for male inmates, yet, while statistically significant, the magnitude of this relationship is quite small. As is reported on Table 26, this pattern of differing relationships by gender is not maintained in the models predicting the individual punishment categories.

Finally, looking to the analyses split by race/ethnicity into non-white and white inmate subsamples, Table 25 reports that while the directionality and significance level of the misconduct category – sanction severity relationship is consistent across non-white and white inmates, there is a disparity in the magnitude of the relationships. Broadly, it appears that the protective effect (the significant, negative relationship) of committing a less-serious misconduct offense (security/order violation) is greater for white inmates than for non-whites. And reflecting the exact opposite pattern, the significant positive relationship between the more serious assault-based misconduct categories and sanction severity is stronger for non-white inmates than for white inmates. As was the case in the gender-based split sample analysis, there is a difference in significance level of the prior misconduct offense history variable, whereby this variable is only significantly negatively associated with sanction severity for non-white inmates. Yet, again, the

magnitude of this relationship is minimal, suggesting that while significant, this effect is quite small.

Considering all this together in light of hypothesis three, results discussed above lend support to the assertion that the relationship between the legal factor of severity of misconduct offense and punishment outcome is conditioned by the extra-legal factors of inmate gender and race/ethnicity.

Two-way Interaction Terms: Extra-legal and Quasi-legal Factors

Hypothesis four assumes that the extra-legal factors (gender and race/ethnicity) will condition the direct effect of the quasi-legal factors on punishment outcome. Tables 28 and 29 present the results of the Heckman ordered probit models which include the calculated interaction terms between the extra-legal and quasi-legal factors.

Sanction Severity Outcome Variable

Gender * quasi-legal factors. While the pattern of direct effects that has been established in prior relationships remains significant, it is evident in Table 28 that the interactions between the extra-legal factor of gender and all the quasi-legal factors have non-significant relationships with sanction severity. Looking at the other relationships in the model beyond the interactions between male gender and the quasi-legal factors, all the previously established direct effects relationships between the instant misconduct offense categories and sanction severity remain significantly associated with sanction severity with the relationships remaining in the same directions (security/order violation β=-.312, drug/alcohol violation β=.648, assault on inmate β=.526, assault on staff β=.463). The significant negative direct effect of the prosocial inmate activity quasi-legal factor of program participation on sanction severity remains, even with the inclusion of the male by quasi-legal factors interaction terms into the models (β=-.239).

Table 28. Heckman Ordered Probit Model with Huber White Cluster Robust Standard Errors (based 326 groups); Dependent Variable = Sanction Severity, Interactions = Male X Quasi-legal Factors

	Selection Model			Full Model		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.312	.073	-4.27***
Drug/alcohol				.648	.068	9.55***
Property/contraband				.097	.058	1.68
Assault: inmate				.526	.056	9.41***
Assault: staff				.463	.063	7.32***
Prior misconduct Hx				-.022	.012	-1.92
Quasi-legal Factors						
Prison job	-.103	.038	-2.71**	-.162	.089	-1.83
Program participation	.228	.035	6.48***	-.239	.120	-2.00*
Time served	.491	.024	20.31***	.006	.058	0.10
Prior incarceration	.225	.030	7.57****	.089	.078	1.14
Interactions						
Prison job * M				.003	.097	0.03
Program participation * M				.170	.125	1.36
Time served * M				-.032	.039	-0.82
Prior incarceration * M				-.012	.085	-0.15
Extra-legal Factors						
Male	.070	.063	1.10	.079	.161	0.49
Non-white	.001	.034	0.03	-.011	.038	-0.29
Controls						
Facility	.000	.000	0.13	.000	.000	0.50
Federal	-.520	.094	-5.50***	.399	.098	4.07***
Age	-.028	.002	-15.32***	.002	.004	0.58
Exclusion Restrictions						
Mental health scale						
1	.139	.047	2.94**			
2	.190	.051	3.72***			
3	.250	.057	4.37***			
4	.152	.107	1.42			
Negative affect	.345	.031	11.19***			
Suicide						
Only thought about it	.102	.049	2.20*			
Prior attempt	.213	.045	4.77***			
GED or HS diploma	.059	.031	1.93*			
Married	-.204	.038	-5.34***			
Constant	-1.177	.126	-9.38***			
Rho	-.247	.137				
Cut 1				-1.735	.219	-7.93***
Cut 2				-.464	.226	-2.05*
Cut 3				-.119	.234	-0.51
Cut 4				.798	.251	3.18***
AthRho				-.253	.146	-1.73
Wald χ^2				308.38***		
Psuedo log likelihood				-11812.85		
Wald test – independence of equations				χ^2 = 2.98, p=0.0842		

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior

Table 29. Heckman Ordered Probit Model with Huber White Cluster Robust Standard Errors (326 groups); Dependent Variable = Sanction Severity, Interactions = Non-white X Quasi-legal Factors

	Selection Model			Full Model		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.313	.074	-4.26***
Drug/alcohol				.647	.068	9.45***
Property/contraband				.096	.058	1.67
Assault: inmate				.535	.056	9.35***
Assault: staff				.462	.064	7.27***
Prior misconduct Hx				-.022	.011	-1.89
Quasi-legal Factors						
Prison job	-.103	.038	-2.72**	-.193	.066	-2.90**
Program participation	.227	.035	6.47***	-.055	.068	-0.81
Time served	.491	.024	20.31***	-.040	.051	-0.79
Prior incarceration	.225	.030	7.57****	.055	.060	0.91
Interactions						
Prison job * NW				.049	.077	0.63
Program participation * NW				-.061	.072	-0.85
Time served * NW				.031	.031	1.00
Prior incarceration * NW				.031	.068	0.46
Extra-legal Factors						
Male	.070	.063	1.10	.094	.080	1.17
Non-white	.001	.034	0.04	-.134	.140	-0.96
Controls						
Facility	.000	.000	0.13	.000	.000	0.50
Federal	-.520	.095	-5.50***	.400	.098	4.06***
Age	-.028	.002	-15.32***	.002	.003	0.59
Exclusion Restrictions						
Mental health scale						
1	.139	.047	2.94**			
2	.190	.051	3.72***			
3	.250	.057	4.36***			
4	.152	.107	1.43			
Negative affect	.345	.031	11.19***			
Suicide						
Only thought about it	.102	.049	2.10*			
Prior attempt	.214	.045	4.80***			
GED or HS diploma	.059	.031	1.93*			
Married	-.204	.038	-5.33***			
Constant	-1.177	.125	-9.38***			
Rho	-.243	.137				
Cut 1						
Cut 2						
Cut 3						
Cut 4						
AthRho						
Wald χ^2				308.66***		
Psuedo log likelihood				-11813.51		
Wald test – independence of equations				χ^2 = 2.91, p=0.0881		

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior

Race/ethnicity * quasi-legal factors. The results of the Heckman ordered probit model with the interaction terms between the second extra-legal factor, race/ethnicity, and the quasi-legal factors are presented in Table 29. Looking directly to the interactive terms under observation in this model, results suggest that there are no significant interactions between race/ethnicity and the quasi-legal factors on the outcome variable of sanction severity. The same pattern of results in the direct effects for the misconduct offense variable that has been discovered previously remains in this model (see Table 29 for standardized coefficients). Finally, the direct effect of having a prison job remains a protective factor against severe disciplinary sanctions (β=-.193).

Split-sample Models: Extra-legal Factors Conditioning Direct Effects of Quasi-legal Factors on Punishment Outcome

Again, however, including interactive terms in regression models is not the only way to examine the conditional effect of the extra-legal factors of race/ethnicity and gender on the relationship between the quasi-legal factors and sanction severity. As was done in the analyses for hypothesis three, the same direct-effect models were run on samples split first by gender and then by race/ethnicity to observe any variations in relationships between the direct effects of the independent variables and the sanction severity scale dependent variable.

Sanction Severity Scale Outcome Variable

Male – female inmate split samples. A review of Table 24, which presents the findings of the split-sample analysis for male versus female inmates, finds that there is less variation in the significance and magnitude of the relationships between the quasi-

legal factors and sanction severity across genders than was observed among the legal-factors and sanction severity across genders. Interestingly, of all the quasi-legal factors, significance is found in gender-based differences in the relationships of the two variables representing prosocial inmate activities and sanction severity, with no significance found for the variables representing criminogenic risk. Specifically, the inmate prosocial activity of having a prison job has a significant negative relationship with sanction severity for male inmates (β=-.162), but this same relationship is nonsignificant for female inmates. Program participation, on the other hand, has a significant negative relationship (β=-.244) with sanction severity for female inmates, yet the relationship is nonsignificant for male inmates. Consistent with results to be presented later in Table 30, the interaction term between inmate gender and non-white race/ethnicity (indicated by the non-white variable in the gender-based split-sample model) is not significant for either male or female inmates. The non-significant race/ethnicity variable in Table 24 provides additional evidence that the interaction between the extra-legal factors (male gender and non-white race/ethnicity) is not significantly related to sanction severity.

Non-white – white inmate split samples. Results of the split-sample analysis for non-white and white inmates presented in Table 25 suggest there are also some differences in the effect of the quasi-legal factors on sanction severity that are conditional on race/ethnicity. Interestingly, both prosocial inmate activities are significantly and negatively related to sanction severity for non-white inmates (prison job β=-.139 and program participation β=-.116), yet these relationships are non-significant for white inmates. The non-significant gender variable in this table once again confirms that the

interaction between male gender and non-white race/ethnicity is not a significant predictor of sanction severity.

Conclusion – Hypothesis Four

An overview of the results of the set of analyses conducted on the sanction severity dependent variable that were designed to address hypothesis four suggest that, while not a consistent effect, the extra-legal factors of inmate gender and race/ethnicity might exert a conditioning effect on the relationship between the group of quasi-legal factors that represent prosocial inmate activities on sanction severity. As is shown in Tables 28 and 29, the calculated interactive terms have a non-significant relationship with sanction severity. Yet, when examining the split sample models shown in Tables 24 and 25, significant differences in level and directionality of relationships are observed, suggesting that the extra-legal factors do condition the relationship between *some* of the quasi-legal factors and sanction severity. Specifically, this statistically significant conditioning effect of race/ethnicity and gender is found for the quasi-legal factors representing prosocial inmate activities (see Tables 24 and 25).

Turning directly to hypothesis four, these results suggest that, while not consistent across all variables considered quasi-legal factors in these analyses, the extra-legal factors of non-white race/ethnicity and male gender do condition the effect of the quasi-legal factors representing prosocial inmate activities on punishment outcome specifically for the more serious punishment categories.

Two-way Interaction Among Extra-legal Factors – Gender * Race/ethnicity Sanction Severity Outcome Variable

Looking towards the last model with interactive terms for the sanction severity dependent variable, Table 30 reports that the interactive term between the two extra-legal factors – male gender and non-white race/ethnicity – is not a significant predictor of sanction severity. All the significant direct effects relationships, however, remain significant in this model. For the legal factors, the instant misconduct offense categories of drug/alcohol offense (β=.644) and assault on a fellow inmate (β=.526) and assault on a staff member (β=.461) are positively related to sanction severity, while security/order violation (β=-.309) has a negative relationship with sanction severity. The two quasi-legal factors of having a prison job (β=-.155) and program participation (β=-.099) are both still negatively associated with sanction outcome.

Three-way Interaction Among Legal and Extra-legal Factors

The fifth and final hypothesis addresses the possibility that three-way interactions between the two extra-legal factors and the legal factors may influence punishment outcome. For these analyses, the three-way interactions under observation are as follows: (1) Gender * Race/ethnicity * Misconduct severity and (2) Gender * Race/ethnicity * Prior history of misconduct. Due to the operationalization of variables, the first interactive term included in the model is actually male * non-white * misconduct severity, while the second becomes male * non-white * misconduct history. These interactive terms are included in models for both operationalizations of the dependent variable – both sanction severity and punishment categories.

Table 30. Heckman Ordered Probit Model with Huber White Cluster Robust Standard Errors (based on 326 groups); Dependent Variable = Sanction Severity, Interaction Among Extra-legal Factors (Male X Non-white)

	Selection Model			Full Model		
	Coef	**SE**	**z**	**Coef**	**SE**	**z**
Legal Factors						
Most serious instant misconduct offense[a]						
Security/order violation				-.309	.074	-4.21***
Drug/alcohol				.644	.067	9.57***
Property/contraband				.096	.057	1.68
Assault: inmate				.526	.056	9.32***
Assault: staff				.461	.063	7.26***
Prior misconduct Hx				-.022	.012	-1.88
Quasi-legal Factors						
Offense of conviction[b]						
Drug	-.023	0.45	-0.51	-.035	.051	-0.68
Property/financial	-.096	.053	-1.82	.037	.059	0.62
Public order/misdemeanor	-.051	.180	-0.28	.125	.230	0.54
Other	-.185	.064	-2.89**	.052	.077	0.67
Prison job	-.103	.038	-2.71**	-.155	.043	-3.58***
Program participation	.227	.035	6.47***	-.099	.044	-2.27*
Time served	.491	.024	20.32***	-.021	.048	-0.45
Prior incarceration	.226	.030	7.58****	.065	.038	1.68
Extra-legal Factors						
Male	.070	.063	1.10	.063	.098	0.64
Non-white	.000	.034	0.01	-.046	.091	-0.51
Male * Non-white	--	--	--	.054	.098	0.55
Controls						
Facility	.000	.000	0.14	.000	.000	0.37
Federal	-.521	.094	-5.51***	.416	.097	4.27***
Age	-.028	.002	-15.33***	.002	.003	0.70
Exclusion Restrictions						
Mental health scale						
1	.139	.047	2.95**			
2	.189	.051	3.74***			
3	.250	.057	4.37***			
4	.151	.107	1.41			
Negative affect	.345	.031	11.14***			
Suicide						
Only thought about it	.102	.049	2.09*			
Prior attempt	.213	.045	4.79***			
GED or HS diploma	.059	.031	1.93*			
Married	-.204	.038	-5.32***			
Constant	-1.177	.125	-9.38***			
Rho	-.269	.135				
Cut 1				-1.767	.189	-9.35***
Cut 2				-.498	.197	-2.52*
Cut 3				-.154	.205	-0.75
Cut 4				.760	.225	3.38***
AthRho				-.275	.146	-1.89
Wald χ^2				318.60***		
Psuedo log likelihood				-11812.50		
Wald test – independence of equations				χ^2 = 3.57, p=0.0589		

NOTES –
*** p ≤.001, ** p≤.01, * p≤.05
[a] Reference: Disruptive behavior, [b] Reference: Person

Sanction Severity Outcome Variable

Table 31 presents the results of the Heckman ordered probit models where sanction severity is regressed on all legal, quasi-legal, extra-legal, and control variables with the three-way interactions and all partial (two-way) interactions included in the models. The first analysis that included a three-way interaction included the legal factor of severity of misconduct offense, as well as the individual direct effect and component two-way interactions. Looking at the focal two-way and three-way interactions of extra-legal factors and misconduct severity, results suggest that there is no significant relationship between gender and race/ethnicity, nor race/ethnicity and gender. As for the direct effects for this model, results indicate that, by and large, the same pattern of significance and directionality observed previously is again maintained for the direct effects of misconduct offense (see Table 31 for findings). Additionally, the direct effect of the legal factor prior misconduct offense has a nonsignificant relationship with sanction severity. As was observed for the legal factors, the same pattern of significance and directionality previously established for the direct effects of the quasi-legal factors on sanction severity are maintained in the current model. As such, the two significant quasi-legal factors are the effect of those representing prosocial inmate activities – having a prison job and program participation – on the outcome of sanction severity.

The second Heckman ordered probit model examining three-way interactions includes the second legal factor of prior misconduct history. Results indicate that both the two and three-way interactions with the extra-legal factors and prior misconduct history are significantly related to sanction severity. Interestingly, though, while all are

Table 31. Heckman Ordered Probit Models with Huber White Cluster Robust Standard Errors (based on 326 groups)[d]
Dependent Variable = Sanction Severity, Three-way (and Component Two-way) Interactions = Male X Non-white X Legal Factors

	Direct Effects	Two-way Interaction			Three-way Interaction		
	***β*(SE)**	**Male x Legal *β*(SE)**	**Non-white x Legal *β*(SE)**	**Male x Non-white *β*(SE)**	***β*(SE)**	***β*(SE)**	***β*(SE)**
Legal Factors							
Most serious instant misconduct offense[a]							
Security/order violation	-.310(.074)***	-.221(.149)	-.413(.12)***	-.309(.074)***	-.193(.211)	-.310(.074)***	-.176(.211)
Drug/alcohol	.645(.067)***	.492(.257)*	.694(.123)***	.644(.067)***	.769(.322)*	.641(.068)***	.723(.310)*
Property/contraband	.096(.057)	.149(.126)	.017(.091)	.096(.057)	.164(.165)	.090(.058)	.047(.167)
Assault: inmate	.524(.056)***	.602(.127)***	.496(.098)***	.526(.056)***	.713(.173)***	.523(.057)***	.522(.181)**
Assault: staff	.460(.063)***	.381 (.143)**	.369(.109)***	.461(.063)***	.689(.193)***	.455(.064)***	.100(.231)
Prior misconduct History	-.022(.012)	.024(.033)	-.013(.019)	-.022(.011)	-.021(.011)	.109(.038)**	.161(.048)***
Interaction 1 – M*NW*Misconduct severity							
Most serious instant misconduct offense[a]							
Security/order violation*M		-.117(.172)			-.313(.258)	--	-.333(.259)
Drug/alcohol*M		.155(.268)			-.104(.349)	--	-.063(.337)
Property/contraband*M		-.072(.143)			-.201(.195)	--	-.075(.198)
Assault: inmate*M		-.101(.141)			-.270(.199)	--	-.056(.211)
Assault: staff*M		.081(.160)			-.371(.216)	--	.265(.262)
Most serious instant misconduct offense[a]							
Security/order violation*NW			.161(.159)		-.063(.290)	--	-.083(.289)
Drug/alcohol*NW			-.071(.157)		-.593(.556)	--	-.550(.544)
Property/contraband*NW			.124(.111)		.016(.213)	--	.143(.214)
Assault: inmate*NW			.0-43(.117)		-.087(.219)	--	.133(.230)
Assault: staff*NW			.131(.137)		-.262(.255)	--	.395(.309)
Most serious instant misconduct offense[a]							
Security/order violation*M*NW					.320(.245)	--	.342(.345)
Drug/alcohol*M*NW					.578(.579)	--	.533(.568)
Property/contraband*M*NW					.150(.246)	--	.015(.248)
Assault: inmate*M*NW					.156(.248)	--	-.084(.263)
Assault: staff*M*NW					.438(.285)	--	-.261(.344)
Interaction 2 – M*NW*Prior misconduct history							
Prior misconduct Hx*M		-.051(.035)			--	-.147(.041)***	-.197(.051)***
Prior misconduct Hx*NW			-.012(.022)		--	-.149(.050)**	-.208(.059)***
Prior misconduct Hx*M*NW					--	.168(.053)**	.221(.064)***

Quasi-legal Factors							
Offense of conviction[b]							
Drug	-.034(.051)	-.031(051)	-.034(.051)	-.035(.051)	-.031(.051)	-.031(.051)	-.028(.051)
Property/financial	.037(.059)	.041(.060)	.035(.060)	.037(.060)	.037(.060)	.041(.060)	.044(.060)
Public order/misdemeanor	.121(.231)	.117(.232)	.122(.233)	.125(.230)	.127(.232)	.125(.228)	.126(.231)
Other	.051(.077)	.051(.077)	.049(.077)	.052(.077)	.047(.077)	.049(.077)	.049(.077)
Prison job	-.155(.043)***	-.155(.043)	-.156(.04)***	-.155(.043)***	-.153(.04)***	-.154(.043)***	-.154(.043)***
Program participation	-.099(.044)*	-.098(.044)*	-.098(.044)*	-.099(.044)*	-.101(.044)*	-.101(.044)*	-.100(.044)*
Time served	-.02(.048)	-.020(.048)	-.019(.048)	-.021(.048)	-.024(.048)	-.023(.047)	-.022(.047)
Prior incarceration	.066(.039)	.066(.039)	.068(.039)	.065(.038)	.066(.039)	.066(.039)	.069(.039)
Extra-legal Factors							
Male	.098(.081)	.236(.125)	.098(.081)	.063(.098)	.241(.148)	.364(.133)**	.495(.164)***
Non-white	-.003(.038)	-.005(.038)	-.043	-.046(.091)	.008(.172)	.253(.146)	.277(.189)
Male*Non-white				.053(.098)	-.104(.192)	-.291(.157)	-.390(.207)
Controls							
Facility	.000(.000)	.000(.000)	.000(.000)	.000(.000)	.000(.000)	.000(.000)	.000(.000)
Federal	.414(.097)***	.414(.098)***	.416(.098)***	.416(.097)***	.424(.098)***	.413(.097)***	.416(.098)***
Age	.002(.003)	.002(.004)	.002(.003)	.002(.003)	.002(.003)	.002(.003)	.002(.003)
Cut 1	-1.737(.18)***	-1.62(.19)***	-1.76(.20)***	-1.765(.19)***	-.17(.209)***	-1.51(.199)***	-1.44(.218)***
Cut 2	-.470(.19)*	-.346(.20)	-.494(.20)*	-.498(.197)*	-.422(.216)*	-.238(.207)	-.171(.225)
Cut 3	-.126(.20)	-.002(.21)	-.150(.21)	-.154(.205)	-.078(.224)	106(.215)	.174(.233)
Cut 4	.789(.22)***	.915(.23)***	.766(.229)***	.760(.225)***	.837(.242)***	1.022(.234)***	1.091(.250)***
AthRho	-.272(.15)	-.266(.15)	-.268(.146)	-.275(.146)	-.281(.147)	-.275(.144)	-.272(.145)
Rho				-.269(.135)	-.274(.136)	-.269(.134)	-.266(.134)
Psuedo R^2							
Wald χ^2	318,42***	325.93***	333.53***	318.60***	350.36***	341.55***	369.09***
Psuedo log likelihood	-11812.70	-11810.10	-11810.93	-11812.50	-11807.19	-11806.79	-11801.37

NOTES –

*** p ≤.001, ** p≤.01, * p≤.05

[a] Reference: Security/order violation, [b] Reference: Person, [c] Reference: White

[d] Coefficients are from estimation models only, sample selection models not shown

Table 32. Two-stage Multinomial Models (Controlling for Sample Selection), with cluster robust standard errors (321 clusters)
Dependent Variable = Punishment Categories, Three-way Interactions (and Component Two-way) = Male X Non-white X Legal Factors

	Stage 1: Probit Model			Stage 2: Multinomial Regression Model (controlling for sample selection with IMR)											
	Selection Model			Sanction Category 2			Sanction Category 3			Sanction Category 4			Sanction Category 5		
	β	SE	z	β	SE	z	β	SE	z	β	SE	z	β	SE	z
Legal Factors															
Seriousness of misconduct[a]				.059	.154	0.39	.072	.214	0.34	.236	.178	1.33	.163	.153	1.07
Prior misconduct Hx				.641	.391	1.64	.687	.287	1.77	.791	.367	2.15	.915	.347	2.64**
Interactions															
Seriousness * M				-.151	.178	-0.85	-.069	.239	-0.29	.023	.202	0.11	-.049	.184	-0.26
Seriousness * NW				-.031	.201	-0.15	.227	.263	0.86	.201	.230	0.88	.134	.200	0.67
Seriousness * M * NW				.108	.235	0.46	-.119	.294	-0.41	-.150	.264	-0.57	-.000	.242	-0.00
Prior misconduct Hx*M				-.622	.400	-1.55	-.679	.401	-1.69	-.870	.378	-2.30*	-.966	.359	-2.69**
Prior misconduct Hx*NW				-.859	.429	-2.00	-.871	.454	-1.92*	-1.086	.402	-2.70**	-1.184	.391	-3.03**
Prior misconduct Hx*M*NW				.781	.445	1.75	.811	.472	1.72	1.007	.418	2.41*	1.137	.410	2.77**
Quasi-legal Factors															
Offense of conviction[b]															
Drug	-.005	.042	-0.11	-.211	.253	-0.83	-.096	.291	-0.33	-.243	.263	-0.92	-.179	.260	-0.69
Property/financial	-.046	.046	-1.01	.021	.296	0.07	-.038	.349	-0.11	.090	.316	0.28	.154	.297	0.52
Public order/misdemeanor	-.080	.158	-0.50	-2.249	.773	-2.91**	-2.324	1.151	-2.02*	-.824	.694	-1.19	-.789	.649	-1.22
Other	-.190	.059	-3.37***	-.064	.456	-0.14	.680	.489	1.39	.059	.474	0.12	.189	.422	0.45
Prison job	-.083	.035	-2.41*	-.253	.226	-1.12	-.357	.239	-1.49	-.875	.215	-4.06***	-.562	.210	-2.67**
Program participation	.224	.031	7.12***	-.092	.210	-0.44	-.126	.243	-0.52	-.492	.203	-2.43*	-.308	.217	-1.42
Time served	.438	.021	21.16***	.063	.159	0.39	-.017	.189	-0.09	-.051	.161	-0.31	.082	.171	0.48
Prior incarceration	.187	.028	6.73***	.200	.165	1.21	.216	.188	1.15	.168	.172	0.97	.378	.168	2.24*
Extra-legal Factors															
Male	.056	.056	0.99	.881	.606	1.45	1.570	.836	1.88*	1.199	.680	1.76	1.583	.695	2.28*
Non-white	-.002	.032	-0.06	1.153	.594	1.94*	.718	.905	.079	.959	.797	1.20	1.316	.761	1.73
Male * Non-white				-1.153	.712	-1.62	-.798	1.001	-0.80	-.698	.906	-0.77	-1.570	.872	-1.80
Controls															
Facility	.000	.000	-0.03	.000	.001	0.28	-.006	.002	-3.52***	-.005	.001	-5.13***	.002	.001	1.17
Federal	-.550	.084	-6.52***	1.451	.645	2.25*	1.040	.738	1.41	3.123	.601	5.20***	1.994	.626	3.19***
Age	-.024	.002	-15.36***	-.021	.013	-1.59	-.014	.015	-0.91	-.000	.013	-0.03	-.016	.014	-1.15

Exclusion Restrictions															
Mental health scale															
1	.140	.042	3.33***												
2	.145	.047	3.07**												
3	.226	.054	4.21***												
4	.098	.102	0.96												
Negative affect	.306	.028	11.11***												
Suicide															
Only thought about it	.099	.044	2.26*												
Prior attempt	.219	.042	5.23***												
GED or HS diploma	.064	.027	2.39*												
Married	-.195	.035	-5.59***												
Inverse Mills Ratio				.627	.476	1.32	.153	.538	0.28	-.328	.467	-0.70	-.053	.485	-0.11
Constant	-.877	.117	-7.48***	1.237	.931	1.33	1.519	1.151	1.32	2.566	.982	2.61**	.090	1.050	-0.09
Psuedo R^2	.2003								.0682						
Wald χ^2	1719.92***								752.54***						
Psuedo log likelihood	-7134.1186								-5832.1413						

NOTES –

*** p ≤.001, ** p≤.01, * p≤.05

[a] Operationalized as continuous variable

[b] Reference: Person

statistically significant, the two-way interactions and the single three-way interaction actually have different directionality. The two-way interactions of prior misconduct history with male gender and non-white race/ethnicity are both negatively associated with sanction severity (β=-.147 and β=-.149, respectively). The variable that represents the three-way interaction of Male * Nonwhite * Prior misconduct history, on the other hand, has a positive association with sanction severity (β=.168), such that with a one unit increase in prior misconduct history, there is a corresponding .168 probit unit increase on the sanction severity scale. Direct effects of the legal and quasi-legal factors in this model are largely consistent with those established in prior analyses. Notably, even though it is incorporated into the two and three-way interaction terms included in this model, the direct effect of male gender has a significant positive association with sanction severity (β=.364), such that holding the effect of all other variables constant, male gender increases sanction severity by .364 probit units.

Results of the final model incorporating two-way and three-way interactions are reported in Table 31. Looking specifically to the interactions, as was the case in the partial models, results suggest that none of the two or three-way interactions that include the legal factor of severity of misconduct offense are significantly associated with sanction severity. The interactions that include the other legal factor, prior misconduct offense, are, on the other hand, significantly associated with sanction severity in this fully saturated model with all two and three-way interactions. As was observed in the partial model discussed above, there is a directionality switch in the nature of the statistically significant relationships between the interaction terms and sanction severity when looking at the two two-way interactions and the three-way interaction with prior

misconduct history. The two-way interaction terms are both negatively associated with sanction severity such that, rather un-intuitively, male inmates (β=-.197) and non-white inmates (β=-.208) with a more extensive prior misconduct history are less likely to receive a punishment option that is at the highest (i.e., most severe) end of the sanctions severity scale. The three-way interactive term representing male – non-white inmates – with a more extensive prior misconduct history is positively associated with sanction severity in the current models. This suggests that, holding the effect of all other factors constant, non-white males with a more extensive prior misconduct history are significantly more likely to receive a disciplinary sanction at the higher end of the sanction severity scale. While not the focus of the current model, direct effects of the block of legal, quasi-legal, and extra-legal factors are consistent with previously established patterns and relationships discussed in direct and interactive effect models.

Punishment Categories Outcome Variable

Table 32 shows the results of the same set of two and three-way interactive analyses conducted for the second operationalization of the dependent variable – individual punishment categories. Table 32 contains the results of a two-stage multinomial logistic regression model where each of the individual punishment categories is regressed on the full model under observation. As was the case for the two-way interactions for the punishment categories dependent variable that also used two-stage multinomial logistic regression models, for ease of interpretation the interval-level severity of misconduct offense variable is operationalized as a continuous variable in these models.

Looking directly to the interactive terms in Table 32, it is immediately clear that, as was the case with the sanction severity operationalization of the dependent variable, the two- and three-way interactive terms with the misconduct offense variable are not significantly related to disciplinary sanction when operationalized as the individual punishment categories. As was the case with sanction severity scale operationalization of punishment outcome discussed above, the two and three-way interaction terms with the second legal factor, prior inmate misconduct history, are all significantly associated with the more serious punishment categories (external custody modification/solitary confinement and receiving a new sentence), but not with the less serious punishment categories (modification of inmate privileges and internal custody modification). But, as has been observed in the other analyses that include both two and three-way interactions (see Table 31), all are statistically significant but the directionality between the two-way interactions and punishment outcome and the three-way interactions and punishment outcome is inconsistent. As has been observed in Table 32, the two-way interactions between prior inmate misconduct history and inmate gender and race/ethnicity are negative for punishment category four (external custody modification/solitary confinement; β=-.870 and β=-1.086 respectively) and punishment category five (receiving a new sentence; β=-1.086 and β=-1.184 respectively). Yet the three-way interaction representing non-white-male inmates-with a more extensive prior inmate misconduct history is positively associated with receiving a disciplinary sanction within punishment category four (β=1.007) and punishment category five (β=1.137).

Conclusion – Hypothesis Five

Hypothesis five, the last hypothesis tested in this research, examines a potential three-way interaction among the extra-legal factors (gender and race/ethnicity) and the legal factors of misconduct severity and prior misconduct record in their influence on punishment outcome. Findings presented in Tables 31 and 32 suggest that, controlling for the three-way interaction between inmate gender – race/ethnicity – and all possible two-way interactions comprised of those variables, the previously-established direct effects of the legal factors of severity of misconduct offense and prior misconduct history remain significantly associated with both sanctions severity and the likelihood of receiving specific punishment options. Results of this study support failing to reject the null hypothesis, acknowledging that the three-way interaction between inmate gender*race/ethnicity*and the legal factors does significantly impact punishment outcome post-disciplinary proceeding.

Interestingly, when the three-way interactions are included in the models, the majority of the two-way interaction terms between the extra-legal and legal factors, as well as the two-way interaction between the extra-legal factors of gender and race/ethnicity, emerge as significant predictors of sanction severity and receiving specific punishment outcomes. More research is needed to flush out the specifics of this relationship where the interactive terms gain significance with further interactions included in the models, but it is possible that this somewhat counter-intuitive finding could be associated with issues of multicollinearity between the direct effects, two-way, and three-way interaction terms (McClelland & Judd, 1993).

Summary

Chapter 5 reported results from a series of multivariate models designed to address whether the extra-legal inmate characteristics of gender and race/ethnicity condition the previously-established significant relationships between the legal and quasi-legal factors and punishment outcome. Three interactive hypotheses were examined: (1) a two-way interaction between the extra-legal and legal factors, (2) a two-way interaction between the extra-legal factors and quasi-legal factors, and (3) a three-way interaction between the two extra-legal factors and the legal factors in their influence on punishment outcome.

While the two-way statistical interaction terms between the extra-legal and legal and extra-legal and quasi-legal factors were not significantly associated with punishment outcome, the split-sample models indicate that the extra-legal factors seem to at least partially condition the relationships between the independent and dependent variables. Thinking about the effect of the extra-legal factor of inmate gender, results of the split-sample models presented in Tables 24 and 26.1-26.2 suggest that the relationship between misconduct severity (a legal factor) and punishment outcome varies for male and female inmates. For male inmates, committing one of the more severe categories of misconduct increases the likelihood that the inmate will receive a more serious punishment outcome on the sanction severity scale and one of the more serious punishment categories, while committing one of the less severe varieties of misconduct is significantly related to receiving a less-severe punishment outcome. Looking at female inmates, though, while the more severe forms of misconduct are significantly associated with receiving a more severe punishment outcome, committing one of the less severe

misconduct offenses does not exhibit that same protective relationship against receiving a serious punishment outcome.

While results in Tables 24 and 26.1-26.2 do indicate that there are gender-based differences in significance level and magnitude relationships between the quasi-legal factors representing prosocial inmate activities and punishment outcome, the results do not suggest a consistent trend conditional on inmate gender.

Tables 25 and 27.1-27.2 report the results of the direct effects models for the sanction severity scale and punishment categories outcome variables regressed on inmate characteristics with the samples split by inmate race/ethnicity. Results of these analyses suggest that inmate race/ethnicity at least partially conditions the effects of the legal factors and the quasi-legal factors representing prosocial inmate activities on punishment outcome. Looking to the legal factors, results indicate that the finding from Chapter 4 that severity of misconduct offense influences severity of punishment outcome is not consistent across white and non-white inmates. The magnitude of the positive relationship between the more severe forms of inmate misconduct and punishment outcome is significantly greater for non-white than white inmates, whereas the negative relationship between the less severe forms of inmate misconduct and sanction severity is significantly stronger for white inmates. This trend is consistent across both operationalizations of the punishment outcome dependent variable.

Patterns change once again when looking at the relationship between the quasi-legal factors and punishment outcome on the race/ethnicity-based split sample models. When looking at the sanction severity outcome variable, the quasi-legal factors representing prosocial inmate activities – which include holding a prison job and program

participation – exert a significant negative (i.e., protective) effect against receiving a more severe punishment outcome for non-white inmates. Yet this same finding of the protective nature of prosocial inmate activities on sanction severity does not hold for white inmates.

When considering the results of the race/ethnicity split sample models regressing the punishment categories outcome variable on relevant inmate characteristics, an even more pronounced trend of relationships conditional on inmate race/ethnicity is observed (see Tables 27.1 and 27.2). In these models, all the previously significant quasi-legal factors (which include the two indicators of prosocial inmate activities and the criminogenic risk factor of having been previously incarcerated) exert a significant influence on the likelihood of receiving a sanction that falls in one of the most serious punishment categories for non-white inmates, but not for white inmates. These differences in the significance level and magnitude of the relationships between the quasi-legal factors and sanction outcome between the samples of inmates suggests that the extra-legal factor of inmate race/ethnicity at least partially conditions these previously-established relationships.

The final set of analyses in this research was undertaken as a form of robustness check, to examine the direct effects of the legal factors on punishment outcome controlling for all possible two- and three-way interactions between the legal, quasi-legal, and extra-legal factors. Results indicate that after controlling for the direct and interactive effects of the extra-legal factors, the significant direct effect between the legal factors and punishment outcome remains significant. However, with the inclusion of the three-way interaction between inmate gender, race/ethnicity, and the legal factors into the

multivariate models, the relationship between all the partial two-way interactions and punishment outcome achieves conventional levels of statistical significance. While these interactive terms are significantly associated with punishment outcome, the significant direct effects of the legal factors remain. This finding suggests that, while inmate race/ethnicity and gender might partially condition the relationship between misconduct severity and prior misconduct history on punishment outcome, these relationships are not fully conditional on the extra-legal factors and do exert a direct effect on punishment outcome beyond that which is conditioned by the extra-legal factors.

Taking a step back from these three specific hypotheses and thinking about the second research question that encompasses hypothesis three through five, results lead to the conclusion that inmate race/ethnicity and gender do seem to condition the relationship between some of the legal factors and punishment outcome. Results of the split sample and interaction term analyses suggest that this conditioning impact of the extra-legal inmate characteristics is only partial, as the direct effects of the legal factors remain significantly associated with sanction severity and likelihood of receiving specific punishment options even when controlling for the two- and three-way interactions of interest.

CHAPTER 6

DISCUSSION

While an everyday occurrence with direct implications for inmate life and freedom of movement within the prison setting, institutional disciplinary proceedings are a largely hidden process that has not been subject to a great deal of rigorous, systematic empirical examination. The main goal of this research project is to examine the impact of various inmate factors on the punishment outcome following inmate misconduct proceedings. Following the model of criminal sentencing research, inmate characteristics are divided into groups of theoretically informed legal, quasi-legal, and extra-legal factors. Making a departure from the prior research on this decision point that looks at the presence or absence of one specific punishment option, this research observes the influence of inmate characteristics on the full range of potential disciplinary punishment options. The research is guided by two specific research questions. First, what is the nature of the direct relationships between the inmate characteristics and punishment outcome? Second, do the extra-legal factors condition the previously-established relationships between the legal factors and quasi-legal factors and punishment outcome?

The final chapter of this research project provides an overview of the main findings of this research as they relate to theory and institutional policy and practice. Following a review of the results of the analyses, the limitations of the data and the study itself are revisited before proceeding to a discussion of the substantive contributions of the findings. Findings are interpreted in terms of their application to both the theoretical model set forth by the focal concerns perspective and the implications for institutional

policy and practice. The chapter concludes with suggestions regarding directions for future research that evolve from this study.

Recap of Main Findings

The first research question concerned the nature of the relationship between inmate characteristics and punishment outcome. Analyses for this study began with bivariate models, progressed through partial multivariate models, and concluded with fully-saturated multivariate examinations of both direct and interactive effects of the theoretically relevant legal and extra-legal factors on punishment outcome. Advancing the extant body of literature beyond the predictive power of these factors on just the presence or absence of a specific punishment option, this study operationalized punishment outcome in two different ways to consider the full range of possible sanction options available to disciplinary personnel. The first operationalization of punishment outcome was the interval-level, ordered "Sanction Severity Scale," for which ordered probit models were run. The second measure of punishment outcome used "Punishment Categories," which was an ordered, nominal-level categorical variable that necessitated the use of multinomial regression models. To account for the incidental sample selection inherent in the research problem, all models were estimated with some form of correction for potential sample selection bias.

Bivariate Relationships

Bivariate regression models, which were completed only for the sanction severity scale, were estimated to provide evidence of an initial relationship between each of the legal, quasi-legal, and extra-legal factors and sanction severity, prior to parsing out

specifics of the relationships when controlling for the effects of other variables in a multivariate context. Results of these models indicated that, with the exception of the offense of current conviction, all theoretically-informed legal, quasi-legal, and extra-legal factors were significant predictors of sanction severity. Offense severity, prior misconduct history (both legal factors), amount of time served and a prior incarceration (quasi-legal factors), and the extra-legal factors of male gender and inmate race/ethnicity had a significant positive effect of sanction severity. Specifically, and consistent with prior research (Butler & Steiner, 2016; Logan et al., 2017), when compared to white inmates, Black inmates were significantly more likely to receive a sanction that fell higher on the severity scale; Hispanic ethnicity and "other" race/ethnicity were not significantly associated with sanction severity at the bivariate level. In addition, a significant but negative effect on sanction severity was observed among inmates with less serious misconduct offenses and for each of the two quasi-legal factors having a prison job and involvement in (non-recreational/non-religious) inmate programming opportunities. Interestingly, the control variable of inmate age at time of interview was not significantly associated with sanction severity even at the bivariate level, counter to the negative relationship typically found between age and misconduct activities (e.g., Steiner et al., 2014) and age and disciplinary outcome (Butler & Steiner, 2017; Clark, 2018; Logan et al., 2017).

Partial Multivariate Models

The next step in the analyses estimated a series of partial multivariate models. In these partial multivariate models, each block of theoretical variables – the legal factors, the quasi-legal factors, and the extra-legal factors – was included in a Heckman ordered

probit model with only the control variables to assess the influence of each block on sanction severity. When both legal factors were included in the multivariate model with the control variables, the previously-established relationship between misconduct severity and sanction severity remained significant, while the effect of prior misconduct history diminished. Each of the significant effects of the quasi-legal factors persisted (with the exception of offense of incarceration, which was not significant at the bivariate level) when controlling for the effect of the other quasi-legal factors and the control variables. Consistent with prior research (e.g., Logan et al., 2017), neither of the extra-legal factors of inmate gender or race/ethnicity were found to be significantly associated with sanction severity once the control variables and other extra-legal factor were included in the models.

Full Multivariate Models

Direct effects. The final set of models to address the first research question regresses the sanction severity scale and each of the punishment categories outcomes, separately, on all legal, quasi-legal, extra-legal, and control variables to observe the effect of the predictor variables on the measures of punishment outcome. The fully-saturated Heckman ordered probit model, holding constant the effect of all other theoretical and control variables, revealed that sanction severity was significantly associated with the legal factors of misconduct severity and prior misconduct and the quasi-legal factors of having a prison job and program participation. As was stated in Chapter 4, the series of nested Heckman probit models is not the preferred statistical technique to examine the unique impact of each of the theoretical variables on each punishment category, so a two-

stage multinomial model controlling for sample selection bias through the calculation and inclusion of the Inverse Mills Ratio was used.

Results of this full multivariate model for the outcome variable observing the likelihood of receiving each of the punishment categories when compared to the reference category of receiving no formal punishment suggested that, once again, there was a strong, positive, statistically significant relationship between misconduct severity and severity punishment. Also consistent with the full model for the sanction severity scale operationalization of punishment outcome, the quasi-legal prosocial inmate activity variables – holding a job and program participation – had a negative effect on receipt of one of the two higher levels of punishment (Categories 4 and 5). In a way, it seemed as if these prosocial inmate activity variables act almost as protective factors, whereby controlling for the effect of misconduct severity and all other theoretical variables, having a prison job and participation in institutional programming significantly decreased the likelihood that an inmate would receive a more severe post-disciplinary punishment. One other significant finding emerged when the separate punishment categories were regressed on the fully-saturated models. The quasi-legal criminogenic risk factor of prior incarceration had a significant positive effect on receiving the most serious punishment category. This relationship had not reached the appropriate level of statistical significance in either the previous full model using the sanction severity scale or for the other, less-serious punishment categories in the current model.

Statistical interaction and conditional effects. The second research question that guided this study involved potential two-way and three-way interactions between the extra-legal variables of inmate gender and race/ethnicity and the legal and quasi-legal

factors. Four sets of two-way interaction terms were calculated for inclusion in the models: male*legal factors, male*quasi-legal factors, non-white*legal factors, and non-white*quasi-legal factors. The multivariate models with sanction severity were regressed on the direct and interactive effects, as were the models with the punishment categories. The same patterns of results were found uniformly across all models that included the two-way statistical interaction terms: while the interaction terms were not significantly associated with punishment outcome, all the variables with previously-established significant effects remained robust to the inclusion of the interaction terms in the models. Yet the non-significance of these interaction terms could have been an artifact of the statistical method, as creating interactions between one or more categorical variables is not ideal and can create problems in the models at times (Long, 1997).

Therefore, a series of split-sample models were estimated to determine whether the relationships between the legal and quasi-legal factors and punishment outcome were conditioned by the extra-legal factors of inmate gender and race/ethnicity. The observed difference in significance level and magnitude of effects between the male and female inmate subsamples suggested that the relationships between the legal factors (misconduct severity and prior misconducts) and quasi-legal prosocial inmate activity factors (prison job and program participation) were conditioned by inmate gender.

A similar pattern of results occurred when data were partitioned by the race/ethnicity of the inmate. In these models, a clear difference was observed in the magnitude and significance level of relationships between the legal factors and punishment outcome between non-white and white inmates. Furthermore, the protective (significant negative) relationship between the prosocial inmate activities factors and both

operationalizations of punishment outcome, and the significant positive effect of prior incarceration on receiving the most severe punishment category (Category 5) were found to hold only for the non-white inmate subsample. Taken together, the results of the split-sample analyses suggest that the extra-legal factors of inmate race/ethnicity and gender did, in fact, condition the relationships between some of the legal and quasi-legal factors and punishment outcome.

Finally, in order to take the analyses one step further, a final set of Heckman ordered probit (for the sanction severity scale measure) and two-stage multinomial models with IMR correction (for the punishment categories outcome measure) were estimated that include a three-way interaction term between inmate gender*race/ethnicity*the legal factors. This three-way interaction of male*non-white*misconduct severity was not significantly associated with sanction severity, while the three-way interaction with the second legal factor of prior misconducts history did exert a strong positive relationship with sanction severity. This finding suggests that, holding all other direct and interactive effects constant, non-white male inmates who committed a more severe form of inmate misconduct were significantly more likely to receive a more severe sanction outcome than were other inmates who did not have that same constellation of intersecting extra-legal and legally-relevant characteristics. Even with the inclusion of this significant three-way interaction into the model, all significant direct effects relationships remained, indicating that the three-way interaction did not *fully* condition the relationships between legal and quasi-legal factors and sanction severity.

When each of the separate punishment categories were regressed on the direct effects and the two-way and three-way interaction terms, it was again observed that while the interaction with the misconduct severity legal factors was not significant, the three-way interaction with prior misconduct was also a significant predictor of this operationalization of the dependent variable. In this model, however, the previously significant effect of misconduct severity on likelihood of receiving specific punishment categories was reduced to non-significance with the inclusion of the three-way interaction terms. Due to the change in operationalization of the misconduct severity variable from categorical to continuous for this model that was described in Chapter 5, it was not possible to determine whether the loss of significance was an artifact of the different operationalization of misconduct severity, or whether the three-way interaction terms *fully conditioned* the relationship between the legal factors and likelihood of receiving specific punishment categories.

Methodological Contributions to the Study of Prison-Imposed Sanction

Beyond the substantive findings related to the research questions and hypotheses under observation, this study also makes some methodological contributions to the literature on inmate disciplinary proceedings and punishment outcome. First, and perhaps most significantly, this study is the first empirically rigorous examination of the prison disciplinary outcome that extends beyond previous studies that examined predictors of any one specific outcome. With the exception of one study (Steiner & Cain, 2017), all contemporary research on this decision point looks at factors that influence receiving disciplinary segregation/solitary confinement as the sole punishment option. While disciplinary segregation/solitary confinement is a very serious disciplinary sanction that

has recently been the subject of an increased amount research and public attention due to the negative physical and mental health and behavior outcomes with which it is associated, disciplinary segregation is not the only form of punishment that institutional disciplinary personnel have at their disposal. Rather, as is the case in criminal sentencing outside the institutional setting, there is a wide range of possible disciplinary sanctions that could be applied in any specific case. These punishment options range from receiving no formal punishment to modification or removal of privileges (such as losing job within the prison setting, restrictions on visitation privileges, and removal from inmate programming), to further restricting inmate freedom of movement by internal or external transfer to an increased custody setting, placement in disciplinary segregation/solitary confinement, or even receiving a criminal conviction and new incarcerative sentence. The findings reported here reveal that inmate characteristics are associated with the receipt of varying punishment options, indicating that it is important to consider the *full range* of disciplinary punishment options when assessing the predictive effects of legal, quasi-legal, and extra-legal factors.

This research also emphasizes the necessity of employing statistical techniques to control for potential sample selection bias when observing this decision point within the criminal justice system. Sample selection models, such as the Heckman two-step model and the two-stage model predicting selection and then using that equation to calculate the IMR which is included as an additional covariate in a second estimation model of interest, are the norm within research on other criminal justice decision points that have inherent incident selection. In criminal sentencing research (which this current research closely parallels in multiple ways), for example, the analytic plan tends to start with an

initial model for the "in-out decision" – whether a defendant is sentenced to an incarcerative term or not – and a second set of models that controls for selection into an incarcerative sentence before estimating sentence length.

While there has been an increase in the number of studies recently published that examine the predictors of an institutional punishment options, none of these studies included statistical techniques to control for any potential bias introduced into the models due to inherent sample selection of inmates into the subsample of interest. As this study demonstrates, controlling for sample selection at this current decision point is important as research confirms that inmate characteristics that impact whether an instance of inmate misconduct is (1) officially identified and then (2) handled officially through institutional disciplinary proceedings also (3) impact the punishment option that is received following the disciplinary proceeding. Thus, it is very possible that the findings of prior research on disciplinary actions that fails to correct for sample selection has produced biased results. Unfortunately, there is no way to conduct post-hoc tests to determine the extent and/or impact of that potential bias on research findings or conclusions drawn from those findings.

Limitations

While this study makes various important substantive and methodological contributions to the literature on post-disciplinary institutional punishment options, the findings and conclusions must be considered in light of its limitations. This study is a secondary analysis of published Survey of Inmates in State and Federal Correctional Facilities (SISFCF) data that was previously collected for a different purpose. As such,

some of the desired constructs are not included in the data, and the specific operationalization of some variables is less than ideal. Most basically, the SISFCF data do not indicate inmate security level or security level of the facility, both of which are likely to be associated with selection into the formal disciplinary proceeding subsample and choice of punishment option. One inmate-level variable that prior research indicates would be important to include in models estimating disciplinary punishment option is an indicator of inmate gang status. Beyond any impact that inmate gang status could have on punishment outcome, it is very likely that gang status impacts selection into the formal misconduct/disciplinary proceeding subsample. As such, without the inclusion of this variable, there is a possibility that both the sample selection and estimation (called "full models" on the tables) models are under-specified.

Additionally, as was mentioned in Chapter 3, the double-barreled wording of the misconduct/disciplinary proceeding question is less than ideal. These SISFCF survey items ask inmates whether they have ever received a formal misconduct ticket and/or were found guilty of each of a variety of misconduct offenses. The wording of this question, then, does not allow for the confirmation that each inmate received a guilty misconduct finding at the disciplinary proceeding. However, prior research indicates that by the time a disciplinary misconduct ticket makes it to the formal disciplinary proceeding, these misconduct tickets are nearly uniformly upheld with a guilty misconduct determination. Further complicating matters, the data do not allow us to be certain that the most recent misconduct event/disciplinary proceeding and punishment outcome occurred at the facility the inmate is housed within at the time of the interview. It is possible that transfer to the current institution at the time of the interview was the

result of the most recent disciplinary proceeding, but this sort of situation would not be captured in the current data.

Operationalizaton of inmate age is also less than ideal for purposes of the current research questions. The inmate age variable present on the SISFCF data indicates age at time of interview, not age at the time of disciplinary proceeding and punishment decision. In addition, there was no time anchor in the data to indicate how recently the "most recent" disciplinary proceeding occurred, that would allow for calculation of inmate age at time of disciplinary proceeding and punishment decision. Similarly, the data contain no measures that could be used to calculated the amount of time (in months or years) or proportion of sentence served at the time that the disciplinary proceeding and punishment decision occurred.

Due to the nature of the data collection protocol for the SISFCF, a "facility indicator" variable is present on the dataset that allows for the identification of all inmates housed within a single facility, but that facility indicator is not consistent with the facility indicators used in either the Census of Correctional Facilities or any facility-level dataset. As such, this research is not able to incorporate any level two (facility-level) variables or characteristics that would be expected to influence punishment outcome. While it is true that some scholars choose to aggregate individual-level data up to the institution-level in order to generate aggregated level-one characteristics as a proxy for having this information at level-two (for instance, aggregating inmate race/ethnicity or current offense information up to determine the overall racial/ethnic or current offense makeup of the inmate population within that facility), the SISFCF data do not include any information on how representative the inmates sampled within each facility are of the

larger facility. In other words, aggregative level-one information up for inclusion as level-two variables in the multivariate models has the possibility of introducing an untestable amount of bias into the models as there is no way to verify that the sampled inmates from each facility are representative of the full inmate population within that facility.

Finally, the current data do not allow for parsing out the difference between the effect of male versus female gender and the organizational differences and variations in supervisory and disciplinary practices that accompany housing within male versus female correctional institutions. In other words, it is not possible to identify the differing influence of male or female *gender* and housing within a male or female *prison facility*. Illustrating this issue, in criminal sentencing research it is possible to observe disparities in sentencing outcome within the same court system (or courtroom or judge) across male and female defendants who have the same constellation of legal, quasi-legal, and extra-legal characteristics. The same cannot be done with the prison disciplinary outcome data, as there is essentially no circumstance in institutional corrections where male and female inmates are housed within the same institutional setting with disciplinary decisions made by the same disciplinary personnel operating in the same custodial environment and circumstance. As such, there is no real way to separate the effect of gender from the effect of housing in a male or female correctional institution.

So, What Have We Learned?

Despite these limitations, the research findings arguably add important contributions to the extant body of literature on how various legal, quasi-legal, and extra-

legal inmate characteristics influence disciplinary punishment within prisons. Focal concerns theory offers a useful heuristic device to interpret these findings and locate them within the broader literature on criminal sentencing. After situating the findings within the focal concerns framework, a discussion of the policy implications informed by this research is followed by suggestions for future research on this largely hidden, but important, criminal justice decision point.

Previous Assumptions and Hypotheses

This study provided a systematic examination of the direct and interactive effects of various legal, quasi-legal, and extra-legal inmate characteristics on institutional disciplinary punishment options. The analyses presented in Chapters 4 and 5 and reviewed at the beginning of the current chapter were designed to address five specific hypotheses. Looking directly to these hypotheses allows for making certain statements regarding the direct and interactive effects of the legal, quasi-legal, and extra-legal factors on punishment outcome. This section will contextualize the main findings of the study in terms of these five hypotheses.

Hypothesis 1. The first hypothesis moved beyond the significant bivariate relationships established in the preliminary stages of this research. This hypothesis stated that, when observing partial multivariate models with only a single group of factors included in the models with the controls, all of the theoretically-informed variables will be significant predictors of post-disciplinary sanction severity. Looking at the models presented in Chapter 4, it was observed that the majority of the legal and quasi-legal inmate-level characteristics influence sanction severity. Those theoretically-informed variables that were not significantly associated with sanction severity include: the legal

factor of prior inmate misconduct history, and the quasi-legal factor of offense of conviction. The previously-significant extra-legal factors (gender and race/ethnicity) also lost significance when the control variables were included in the partial multivariate model. Thus, results of the partial multivariate models suggest that we should reject the assumption made in the first hypothesis.

Hypothesis 2. Moving on to the second hypothesis, it was assumed that in fully-saturated multivariate models where all the theoretical variables and control variables were included at one time, the legal and quasi-legal factors would remain significant predictors of punishment outcome and the extra-legal factors would not. Results of the full regression models, both for sanction severity and the individual punishment categories, provide support for this assumption made in hypothesis two.

Looking beyond the significance level to the magnitude of the standardized coefficient for the relationship between the relevant legal and quasi-legal factors on punishment outcome, results indicated that the legal factor of misconduct severity was more strongly associated with (or predictive of) punishment outcome for the more serious categories of misconduct. Additionally, when we observed the outcome variable of the specific punishment categories, there was a clear trend where the more severe misconduct categories were positively associated with likelihood of receiving the more serious punishment categories.

Another clear trend was observed with the effect of the quasi-legal factors on sanction severity and the individual punishment categories. Across the full multivariate models, the quasi-legal factors that represented prosocial inmate activities – prison job and program participation – exerted a consistent protective effect over receiving a more

severe disciplinary sanction. This protective relationship is indicated by varying directionality on the different models. The prosocial inmate activity variables were negatively associated with the sanction severity outcome measure and those punishment categories that represent the more serious punishment categories, but were positively associated with the likelihood of receiving the less-serious categories of disciplinary punishment. Taken together, those findings suggest that, controlling for the influence of the legal and other factors, having a prison job and program participation significantly decreased the likelihood that an inmate would receive a more-serious post-disciplinary punishment. Those quasi-legal factors that represented criminogenic risk, on the other hand – offense of conviction, time served in prison, and prior incarceration – were either inconsistently related to or non-significant predictors of punishment outcome, so concrete conclusions unfortunately cannot be made about these variables.

Hypothesis 3. The remainder of the hypotheses for this study involved the conditional and interactive influence of the extra-legal factors on the relationship between the legal factors and punishment outcome. Specifically, the third hypothesis assumed that the extra-legal factors of inmate gender and race/ethnicity would interact with the legal factors to significantly influence punishment outcome, attenuating the direct effects of the legal factors. Results of the study suggest that this assumption was accurate.

While the two-way statistical interaction terms were not significantly associated with punishment outcome, the direct-effects model re-run on samples split by inmate gender suggested that inmate gender does condition the effect of the legal factors on punishment outcome. Across both sanction severity and the specific punishment categories, there was a much more consistent relationship between misconduct severity

and punishment outcome for male inmates than female inmates. For males, committing a more serious misconduct offense increased the likelihood of receiving a more serious or severe punishment, while committing a less serious misconduct offense increased the likelihood of receiving a less serious/severe punishment outcome. This relationship was not replicated for female inmates, however, as only the positive relationship between the severe misconduct categories and the more severe punishment categories were significantly associated among the female inmate subsample.

As was the case for the gender*legal factors interaction, the statistical interaction terms between non-white inmate race/ethnicity and the legal factors were also not significant predictors of either sanction severity or specific punishment categories. The race/ethnicity-based split-sample models for the non-white*legal factors interaction also suggested that inmate race/ethnicity conditioned the relationship between the legal factors and punishment outcome. While the directionality and significance of the effects of misconduct severity on punishment outcome were consistent across the non-white and white inmate subsamples, the magnitude of these relationships differed such that, holding all other factors constant, non-white inmates who committed more serious misconduct offenses were more likely to receive a severe disciplinary sanction than were white inmates who committed the same misconduct offenses.

Hypothesis 4. Turning towards the quasi-legal factors, the fourth hypothesis for the study predicted that inmate gender and race/ethnicity would significantly condition the relationship between the quasi-legal factors and punishment outcome. The results of this study cannot fully confirm the assumptions on which this hypothesis was grounded. As was the case for hypothesis three, neither of the interactive terms (gender*quasi-legal

factors and non-white*quasi-legal factors) were significantly associated with punishment outcome. Results of the gender-based split sample models also were rather inconclusive.

When the direct-effects models were re-run on the samples split by inmate race/ethnicity, however, it appeared that the predictive ability of the pro-social inmate behavior quasi-legal factors (prison job and program participation) differed by race/ethnicity across both the sanction severity and punishment categories outcome variables, with the negative/protective effect exhibiting a significant effect largely for only the non-white inmates. The criminogenic risk-related quasi-legal factor of previous incarceration was also only significantly associated with punishment outcome for non-white inmates. Taken together, these findings indicated that this quasi-legal variable has an inconsistent effect on punishment outcome across race/ethnicity.

Hypothesis 5. The final hypothesis for this study involved the existence of a three-way interaction between inmate gender*race/ethnicity*and the legal factors. In a way, this hypothesis essentially served as a robustness to check on the direct effects of the legal factors on punishment outcome controlling for all possible two- and three-way interactions between the legal, quasi-legal, and extra-legal factors. Results of the final analyses indicated that, after controlling for the direct and interactive effects of the extra-legal factors, the significant direct effect between the legal factors and punishment outcome remained significant. With the inclusion of the three-way interaction into the multivariate models, however, the relationship between all of the partial two-way interactions and punishment outcome achieved statistical significance. This was an interesting finding, because in previous models with only the two-way interactions, they were found to be non-significant predictors of punishment outcome. While these

interactive terms are significantly associated with punishment outcome, the significant direct effects of the legal factors remained. These significant direct effects while controlling for all the two- and three-way interactions suggested that, even though inmate race/ethnicity and gender might *partially* condition the effect of misconduct severity on punishment outcome, these relationships are not, in fact, *fully conditional* on the extra-legal factors.

Focal Concerns

The focal concerns perspective is a theoretical framework that is used to explain why various individual, offense, community, and case processing/contextual factors influence decision making by criminal justice actors. This theoretical framework is commonly applied in criminal sentencing research, but has also been applied at other decision points (e.g., the police decision to arrest, prosecutorial charging decisions, and parole release decisions). Recently, in fact, the focal concerns perspective has been applied to institutional disciplinary punishment decisions (Butler & Steiner, 2016; Logan et al., 2017). Following the model of sentencing research, this study uses the focal concerns perspective as a mechanism by which to understand why various inmate characteristics are associated with post-disciplinary punishment outcome.

As was discussed in the literature review in Chapter 1, there are three focal concerns that influence sanctioning decisions: perceptions regarding individual (offender) blameworthiness, a desire to protect the community, and practical constraints and consequences. While it is possible to find parallels between each of the focal concerns as perceived in sentencing research and the institutional disciplinary sanction decision, operationalization of these focal concerns within the prison institutional context differs

from that which is common in criminal sentencing research. For purposes of the current study, the inmate characteristics and variables that make up the legal, quasi-legal, and extra-legal factors have been aligned with the three focal concerns, in order to help understand and contextualize why the significant variables exert an effect on prison disciplinary punishment decisions. As an aside, this study is not a test of focal concerns per se; instead focal concerns theory is used as a lens through which to understand why the various legal, quasi-legal, and extra-legal factors are significantly associated with punishment outcome. Figure 3 below shows how the theoretical variables observed in this study align with the focal concerns surrounding punishment decisions following inmate misconduct proceedings.

Figure 3. Overview of Independent Variables and Focal Concerns

Variable	Focal Concern[a]	Directionality/Significance
Legal Factors		
Instant misc offfense	Blameworthiness	+ (more severe misconduct, more severe sanction); * p≤.05
Prior misconduct Hx	Blameworthiness	ns
Quasi-legal Factors		
Offense of cnvction	Protection of the community	ns
Prison job	Protection of the community	- ; * p≤.05
Program participation	Protection of the community	- ; * p≤.05
Time served	Protection of the community	ns
Prior incarceration	Protection of the community	ns
Extra-legal Factors		
Gender	Protection of the community (bias regarding risk perceptions and gender)	mixed findings on directionality and significance
Race/ethnicity	Protection of the community (bias regarding risk perceptions and race/ethnicity)	mixed findings on directionality and significance
Controls		
Facility	Practical constraints/consequences	* p≤.05
Federal v. State	Practical constraints/consequences	* p≤.05
Inmate age	--	- ; * p≤.05

NOTES:
[a] Common conceptualization in prior research

+ indicates positive relationship; - indicates negative relationship
* p≤.05
ns Not significant

Starting with blameworthiness of the offender, this first focal concern involves specifics of the offense and offender that are associated largely with offense seriousness. For purpose of the current research, the legal factors of misconduct severity and institutional misconduct history are the inmate and misconduct offense characteristics that are most closely aligned with offense seriousness, and hence, blameworthiness. Results indicate that the legal factor of misconduct severity is the most consistent and strongest (in terms of magnitude of standardized effect size) predictor of punishment outcome when operationalized as both sanction severity and likelihood of receiving a specific punishment category. Findings of this study indicate that those inmates who committed the most serious categories of misconduct and with the most extensive prior misconduct history were considered the most "blameworthy," and, hence, were more likely to receive a severe disciplinary sanction. Additionally, the legal factors remained significant predictors of punishment outcome through the addition of the direct and interactive effects of the quasi-legal and extra-legal factors, indicating that blameworthiness is a primary concern in the institutional decision regarding disciplinary punishment outcome.

It seems logical that in a total institution (Goffman, 1961) that is first and foremost concerned with maintaining safety and stability (such as prison settings), the second focal concern of desire for the protection of the institutional community would be highly important. Elements that might impact judgments regarding the punishment option that is needed for protection of the institutional community could be considered to be those (quasi-legal factors) associated with prosocial inmate behavior and criminogenic risk. Findings of this study indicate that the prosocial inmate behavior quasi-legal factor

of having a prison job and involvement in inmate programming opportunities are significantly associated with punishment outcome. In terms of this focal concern, it could be that, holding the effect of misconduct severity constant, institutional disciplinary personnel view inmates who are involved in these prosocial activities to have a greater stake in the institutional community. This embeddedness in the institutional community represented by the prosocial inmate behaviors, then, could suggest to disciplinary personnel that these inmates inherently represent minimal threat to the future stability of the institution, minimizing the need to disrupt those prosocial ties by subjecting them to severe disciplinary sanctions.

The second group of inmate-level factors that are considered to align with the focal concern of protection of the institutional community are the quasi-legal factors representing criminogenic risk (offense of conviction, time served, and prior incarceration). Results of this study indicate that two of the three risk-related variables – offense of conviction and time served – are not significantly associated with punishment outcome across nearly all models explored. While beyond the scope of the data and analyses for this study, it could be assumed that offense of conviction and time served do not actually represent factors that increase perceptions of risk within the institutional setting. It could be that, in the view of correctional officers and institutional disciplinary personnel, all inmates are just viewed as "inmates" regardless of the offense for which they were incarcerated and the amount of time they have served in the current term of incarceration. If this is the case, these factors would not necessarily be associated with an inmate who represents a high level of risk.

The third quasi-legal criminogenic risk factor, prior incarceration, is significantly associated with receiving a punishment that falls within the most serious punishment categories, and appears to have a different effect on sanction severity across the extra-legal factors of inmate gender and race/ethnicity. The results of this study cannot be used to make concrete statements about these relationships, but the findings do indicate that there may be gender- and/or racial/ethnic-based disparities in the relationship between the criminogenic risk factors and punishment outcome. In a way, then, it is possible that risk-related perceptions and judgements made by institutional disciplinary personnel regarding the severity of punishment outcome that is necessary to maintain protection of the institutional community could differ based on extra-legal characteristics of inmates.

As is shown in Figure 3, the final focal concern of practical constraints and consequences of punishment decisions is challenging to operationalize given the limitations of the SISFCF data used for this study. In theory, it seems very likely that there could be institution- and even system-level constraints on the type of punishment options that disciplinary committees are able to use in determining the appropriate post-disciplinary sanction. For example, in order to formally sanction an inmate to be transferred to a different facility with a higher custody level in response to their disciplinary misconduct, there would have to be available bed space in a higher-custody facility within that larger state or Federal system. Similarly, in higher custody facilities and/or under-resourced facilities or state systems, inmates may have fewer opportunities for privileges (such as visitation, canteen, prison employment, and opportunities to engage with various programming options), in which case the punishment category of "modification of inmate privileges" is not a feasible option.

Unfortunately, this sort of information (as well as general case processing factors) is absent from the SISFCF data, and it is equally likely that it is not captured on other institutional corrections datasets. With the information that is available in the data used for this study, the closest data elements to indicators of the focal concern of practical constraints and consequences include the facility ID variable and the variable indicating which facilities are part of the Federal system. It is clear that these variables are not true indicators of this focal concern, yet, they are included in the models and considered here to be proxy variables due to the acknowledgement that some of the practical constrains of various punishment options (e.g., availability of solitary cells and whether there are various inmate privileges to revoke) would be somewhat consistent across all disciplinary cases within the same institution.

Through the exercise of walking through the results of this study in the context of this perspective it is clear that, like other discretionary decision points, focal concerns can be considered a heuristic device to help contextualize why certain inmate-level factors are associated with prison disciplinary punishment decisions.

Policy Implications

The findings of this research on the direct and interactive effects of various legal, quasi-legal, and extra-legal inmate characteristics on punishment outcome have direct implications for disciplinary policy and practice within prisons. This research finds that, controlling for the quasi-legal and extra-legal characteristics of inmates, the legal factor of misconduct severity is significantly associated with punishment outcome received. According to these data, the relationship between misconduct severity and punishment outcome is stronger at the higher end of both spectrums; the more-severe varieties of

misconduct are more strongly associated with more-severe sanction outcomes than are the less-serious forms of misconduct associated with the less-severe punishment outcomes. It is likely that more serious misconduct is viewed as representing a greater threat to the social order of the institution and is therefore taken more seriously by the disciplinary committee, resulting in a higher severity disciplinary sanction than would be the case if the misconduct event was perceived as less of a threat to the institutional community.

Another interpretation of this finding would be that there appears to be higher levels of discretion in what influences choice of punishment option at the lower end of the categories of misconduct severity than there is at the higher end (meaning when more severe varieties of misconduct are committed). This finding of higher levels of discretion among lesser misconduct offenses is consistent with the long-standing findings from research on other discretionary decision points in the criminal justice system, whereby greater levels of discretion are inherent in the handling of lower-level offenses than higher-level, more serious offenses (Gottfredson & Gottfredson, 1987; Walker, 1983). It is clear from this current research that more severe inmate misconduct is statistically associated with receiving a more severe/serious punishment outcome.

Results indicate that while misconduct severity is associated with punishment outcome at all levels of the sanction severity scale, the quasi-legal and extra-legal factors are more likely to condition the relationship between the legal factors and punishment outcome for lesser misconduct offenses. This finding makes intuitive sense. When a very serious misconduct offense is committed, such as a physical assault on a fellow inmate or a corrections officer, it makes sense that a very serious punishment outcome would

accompany that very serious misconduct offense, regardless of the quasi-legal and extra-legal factors. However, when a less-serious misconduct offense is committed that represents a minimal threat to the stability and safety of the institutional setting, that is where room for *other* considerations regarding inmate behavior (both prosocial and negative/criminogenic), enter into determination of the most appropriate punishment option in each unique disciplinary situation. In other words, when misconduct severity is low, what influences the punishment outcome that is received? Results of this study indicate that indicators of prosocial inmate behaviors within the institutional setting and various elements that indicate an inmates' level of risk to the social order and safety/stability of the prison influence choice of punishment outcome when misconduct severity is low.

Overall, it is important to be assured that holding legal factors related to misconduct severity (and history of misconduct) constant, disparities based on extra-legal factors *do not* result in certain groups of inmates being more likely to be exposed to more severe disciplinary sanctions. In a time when the research community and public is sensitive to and aware of issues of racial/ethnic disparities prevalent in our criminal justice system, it is of the utmost importance to be assured there is consistency in the manner formal social control is exerted. This need for consistency in application of formal social control via disciplinary punishment is exacerbated in institutional settings like prisons, as there is already a high likelihood for strained power relations that can have direct implications for perceptions of procedural and distributive justice.

Directions for Future Research

Various avenues for future research are suggested by the findings from this research. This study identified significant race/ethnicity and gender-based conditional and three-way interactive effects in the relationships between various legal and quasi-legal factors and punishment outcome, but more research is required before any concrete claims of race/ethnicity and/or gender-based disparities exist in the determination of post-disciplinary punishment option. At minimum, this research should be replicated with different data that includes some of the important missing variables – principally inmate gang membership status, inmate age at the time of disciplinary proceeding, and more encompassing indicators of inmate mental health at the time of disciplinary proceeding. Any replication also should take steps necessary to avoid (i.e., control for) the sample selection bias present in the data used for this study.

Beyond mere replication, this line of research should be extended to include appropriate level-two (facility/institution-level) and even level-three (state/Federal prison system) data. The nature of this research problem is truly a multilevel research question, as it is very likely that disciplinary practices could change based on institution-specific factors (e.g., inmate demographic and criminogenic makeup, level of overcrowding, available disciplinary resources, etc.) and even system-level factors (e.g., disciplinary practices that are consistent for all institutions within a larger state department of corrections system). With the inclusion of various fixed and random effects variables at level two, it would be possible to statistically isolate the effects that the legal, quasi-legal, and extra-legal inmate characteristics have on punishment outcome from the effects of the institution-level influences on punishment outcome. Additionally, with the inclusion

of level-two variables in the models, it would be possible to identify and estimate cross-level interactions whereby certain inmates might be treated differently in specific institutional contexts based on a variety of inmate legal, quasi-legal, and extra-legal characteristics.

Thinking about the larger disciplinary process, there is need for future research to be conducted in a longitudinal framework. Publically-available (even restricted access) institutional longitudinal data that tracks inmates throughout their full term of incarceration is rare, but this research area could be greatly impacted by the ability to study the institutional disciplinary process in a longitudinal context. For instance, while the SISFCF data allow for the development of the prior misconduct history variety score that was used in this research, it does not include important information regarding whether an inmate has received specific disciplinary punishment outcomes in the past. It is very likely that, just as prior misconduct history effects punishment outcome, prior disciplinary sanctions could also impact choice of punishment outcome in subsequent disciplinary proceedings.

Finally, the knowledge base regarding inmate disciplinary proceedings and the consequent punishment outcome that follows a guilty misconduct determination would be greatly improved by a line of qualitative, observational research that observes and documents the full institutional disciplinary process. Disciplinary processes within correctional institutions are conducted fully internal to the facility, so knowledge of exactly what happens during these proceedings is somewhat of a "black box." It can be assumed, for instance, based on information available in inmate case files, inmate handbooks, and prior research, that institutional disciplinary personnel have access to

various pieces of information to help guide their disciplinary and punishment decisions. But, of course, at this time there is no definitive confirmation that this is true. The disciplinary process technically involves three separate discretionary decision points: the filing of a formal misconduct ticket, the finding of guilt for that misconduct offense, and the consequent punishment option. Qualitative research in which a researcher observes the full disciplinary proceeding and decision-making process(es) would shed light onto this topic in a way that cannot be done with current inmate self-report or administrative data. Similarly, it is likely that, as is the case with criminal sentencing, various case processing factors (e.g., whether the inmate provided commentary on the misconduct event, and the role that the reporting correctional officer plays in the disciplinary process) could influence the punishment outcome of the disciplinary process. Until such data are collected, however, we cannot examine the validity of this assumption.

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APPENDIX A

MISSING DATA

The full sample size for the 2004 SISFCF is 18,158 inmates. Since the outcome variable of estimation models for the substantive models of interest is punishment or sanction outcome following disciplinary proceeding, models are estimated on a subsample of the full dataset. This subsample includes only those 8,300 inmates (45.6% of 18,185) who received a formal misconduct ticket that resulted in the initiation of the formal inmate disciplinary process. This type of circumstance where the presence of data on a variable of interest is fully conditional on another variable, is a case of incidental selection which can result in the introduction of sample selection bias (Berk, 1983; Berk & Ray, 1982). The current research minimizes this potential bias for damaging levels of selection bias through the use of various two-part sample selection models that allows the researcher to distinguish between the two different processes – first estimating an equation for selection, and then modeling the estimation equation of interest while controlling for the effect of selection on observed levels of the dependent variable (Bushway et al., 2007; Heckman, 1987). This issue of selection, which can be thought of as a case of missing data where the data are missing *not* at random (Allison, 2001), is distinct from problems surrounding incomplete information on the variables of interest, or missing data more generally (Allison, 2001; Graham, 2009).[23] Procedures for handling the more general meaning of missing data as incomplete information will be discussed in this section.

[23] For information on sample selection models used in the research, see Chapter 3.

Missing data can be handled in a variety of different ways. One way is complete case analysis.[24] In complete case analysis, cases that have data missing on any of the variables under observation are deleted in a listwise fashion. This can be a problematic strategy to employ when listwise deletion results in diminished statistical power to detect significant results. However, when only a small amount of data are missing[25] and missingness diagnostics (discussed further below) suggest that the data either meet the criteria for missing completely at random or the less-stringent assumption of missing at random, complete case analysis may be preferable as it will not bias standard errors and all other relevant statistics that are based on standard errors (Allison, 2001, footnote 1).

Even though there are 8,300 inmates who self-report that they received a formal misconduct ticket/guilty finding following disciplinary proceeding, the data only contain punishment outcome information for ninety percent of those inmates (n=7496). Of those, all cases in the "other punishment received" option were removed (n=721), leaving a subsample of 6,775 inmates with a punishment decision to analyze (see Tables 1 and 2) for breakdown of figures.

After initial data cleaning and transformation, a missing data audit was conducted in Stata14 (StataCorp, 2015) to observe the extent and patterns of missingness among the complete subsample of 6,775 inmates for which we have data on the most recent punishment decision. The two-stage process of the missing data audit included observing

[24] Other methods of handling missing data include imputing the missing values through either mean value imputation, maximum likelihood estimation, "hot deck" imputation, and multiple imputation (Allison, 2001).

[25] There is no real standard metric for what constitutes "too much" missing, instead it is a judgement that must be made within the context of each research problem (Allison, 2001).

frequencies and extent of missing for each variable ('mv' post-estimation command in Stata14) included in the estimation and selection models, and then looking at patterns of missingness ('mi: … , problems' command in Stata14). Results of the missing data analysis indicate that 93 percent (n=6,304) of the 6,775 inmates that have full, complete data on all variables of interest in the estimation model and sample selection model.

As has been established in a good deal of methodologically rigorous literature published in criminology and criminal justice journals, the sampling strategy employed in constructing the current dataset (the 2004 Bureau of Justice Statistics' Survey of Inmates in State and Federal Correctional Facilities/SISFCF) has resulted in a highly representative sample of male and female inmates incarcerated within state and federal correctional facilities (Bureau of Justice Statistics, 2004). Prior research with the same series of data demonstrates the generalizability of the sample and the degree to which it is representative of the full population of inmates, and therefore of inmate misconduct (Camp, 1999; Camp, Gaes, Klein-Saffran, Daggett, & Saylor, 2002; Harrison & Beck, 2007), making it an ideal choice for this study. Beyond the assurance of representativeness of the dataset used in this study (USDOJ, 2004), a review of the literature that uses these same data (e.g., Butler & Steiner, 2016; Logan et al., 2017; Olson, 2016) suggests that the vast majority of this research does not handle missing data in a way that preserves missing information. Instead, that research employs a complete case analysis strategy to handle missing data, whereby cases that are missing information on any of the variables of interest are removed from the sample (e.g., Butler & Steiner, 2016; Logan et al., 2017).

In order to determine whether there are difference between the full SISFCF sample (n=18,185), the selection variable sample (n=8,300), the sample which has information present on the dependent variable (n=6,775), and the subsample for which all data is present on variables on interest (i.e., sample after list-wise deletion; n=6,304), descriptive statistics are calculated for each subsample. Additional analyses were able to identify variables with statistically significant differences in mean values (in the form of t-tests and chi-square analyses) across the sub-samples (see Table A1). A comparison of the descriptive statistics and significant differences of means reveals that the majority of the statistically significant differences on variables of interest across subsamples occurs between the full SISFCF sample and the selection variable sample, and between the selection variable sample and the subsample that has data present for the dependent variable. This means, then, that the descriptive statistics and comparison of mean values on these descriptive statistics indicate there is minimal-to-no statistically significant difference between the sample for which data on the dependent variable is available and the final subsample following list-wise deletion of cases missing any value on the variables of interest in either the estimation or sample selection models (for exception, see values for offense of conviction and program participation).

Since the representativeness and generalizability of the data are well established (e.g., Camp et al., 2002), coupled with the observation discussed above regarding minimal statistically significant differences in mean values of all variables of interest between the dependent variable and full information subsamples, list-wise deletion was employed to handle missing values. While not always the case in all analyses, list-wise deletion resulting in complete case analysis is the preferred method for handling missing

values in this research for various reasons. First, of the 6,775 inmates for which data are present on the dependent variable that would be considered the sample of interest for the research questions under observation, over 93% (n=6,304) of the data are retained with list-wise deletion. With a sample size so high, the concern that list-wise deletion will effect statistical power, and therefore minimize the likelihood of statistically detecting significant relations in the data even when they do exist within the population, is nearly eliminated (Allison, 2001); a decrease in statistical power as a result of list-wise deletion of 471 cases (with a final sample size of 6,304) is not a concern in the current analyses. Second, while it is true that there is no way to distinguish whether data is missing at random (MAR) or missing completely at random (MCAR) (Berk, 1983; Graham, 2009), there is no reason to assume that the data are not at least MAR – which is the lesser restrictive of the two missingness assumptions (Allison, 2001). When statistical power is not effected and there is no reason to *not* assume MAR, list-wise deletion is one of the appropriate methods to handle missing data as list-wise deletion under these circumstances (appropriate statistical power and an assumption of MAR or MCAR) will not bias estimates of regression coefficients or standard errors (or anything that depends on standard errors, such as p-values/significance levels) (Allison, 2001, footnote 1).

Further reinforcing the decision to use list-wise deletion (of 471 cases) to handle missing data on the variables of interest, it is important to acknowledge the inherent instability that is introduced into the models when either an incidental selection issue or interactive effects are included into imputation models. Both of these methodological hurdles allow for the introduction of bias into otherwise methodologically and conceptually appropriate models, especially when outcome variables follow a distribution

that is non-normal (Allison, 2001) and the multiplicative influence of both of them in combination can be hard to overcome. In this type of situation employing multiple imputation procedures can result in specifying an inappropriate imputation model, which produces imputed estimates that are not reflective of the distribution of the variables of interest as observed in the full dataset.

As an additional concern within the context of this research, Stata14 will not inherently run Heckman sample selection models within the multiple imputation commands. While it is true that it is possible to use to 'cmdok' command in Stata14 to force the program to run Heckman models within the multiple imputation ('mi:') framework, an examination of degrees of freedom associated with the fully-saturated Heckman ordered probit model for sanction severity (a diagnostic commonly used to justify the strength of imputation models [Allen, 2001]), suggests that this model, when run within the multiple imputation framework, is not statistically appropriate (see Table A2). Common practice suggests that a degree of freedom threshold of 100 should be reached before an imputation protocol can be considered appropriately modeled (Allen, 2001). But, as reported on Table A2, degrees of freedom for the Heckman ordered probit model are enormously inflated, as are the standard errors, suggesting that the imputation models are highly biased. Not reported in Table A2, but the increase in standard errors between the non-imputed and imputed Heckman models ranged upwards of 10.91-29.25%. Additionally, the Stata14 output from the Heckman ordered probit model in Table A2 was not able to calculate the F-statistic or Chi-square, further suggesting that the Heckman selection models do not behave as would be desired within the multiple imputation suite of commands on Stata14.

By way of overview, since the extent of missing data is very minimal, the sample size is very high, and there is a high possibility of inherent bias due to sample selection and interactions among categorical variables in the estimation models, coupled with the finding that descriptive statistics suggest that the list-wise deletion subsample is not significantly different from the full dependent-variable-present subsample on the vast majority of variables of interest, it becomes much more important to handle the potential sample selection issue than to preserve the roughly seven percent of data lost through list-wise deletion. As described in Chapter 3, the Heckman correction (Heckman, 1987) and the more general two-stage estimation procedure (Bushway et al., 2007) will be used to account for sample selection bias in the estimation models predicting punishment outcome.

Table A1. Descriptive Statistics Across Samples: Missing Data Analysis

	Full Sample (n=18,185)	**Selection Variable Subsample (n=8,300)**	**Dependent Variable Subsample (n=6,775)**	**List-wise deletion (n=6304)**
	Mean (SD) or *# (%)*	Mean (SD) or *# (%)*	Mean (SD) or *# (%)*	Mean (SD) or *# (%)*
Legal Factors				
Dependent Variables				
DV1: Sanction Severity Scale	--	--	3.38 (1.24)	3.27 (1.31)
DV2: Punishment Category				
No punishment [1]	--	--	*303 (4.47)*	*283 (4.57)*
Modification of privileges [2]	--	--	*1,991 (29.39)*	*1,852 (29.36)*
Custody modification – internal [3]	--	--	*823 (12.15)*	*766 (12.14)*
Custody modification – external or solitary [4]	--	--	*2,132 (31.47)*	*1,984 (31.46)*
Modification of sentence [5]	--	--	*1,526 (22.52)*	*1419 (22.51)*
Independent Variables				
Legal Factors				
Instant Misconduct Offense[b]				
Disruptive behavior	--	*1,913 (23.13)*	*1,501 (22.15)*	*1,396 (22.14)*
Security/order violation	--	*563 (6.76)*	*382 (5.65)*	*356 (5.63)*
Drug/alcohol	--	*569 (6.84)*	*491 (7.25)*	*457 (7.21)*
Property/contraband	--	*1,668 (20.08)*	*1,324 (19.53)*	*1232 (19.52)*
Assault: inmate	--	*1,856 (22.35)*	*1,593 (23.51)*	*1483 (23.50)*
Assault: staff	--	*1,731 (20.84)*	*1,484 (21.91)*	*1380 (21.89)*
Prior misconduct history[b]	--	2.05 (1.78)	2.18 (1.80)	2.17 (1.80)
Quasi-legal Factors				
Offense of Conviction[a, c]				
Drug	*10,297 (57.39)*	*5,158 (62.81)*	*4,255 (62.81)*	*3,957 (62.77)*
Property/financial	*3,639 (20.28)*	*1,472 (17.92)*	*1,192 (17.58)*	*1,109 (17.60)*
Public order/misdemeanor	*162 (<1.00)*	*65 (<1.00)*	*50 (<1.00)*	*47 (<1.00)*

Person offense	*2,152 (11.99)*	*1,020 (12.42)*	*860 (12.70)*	*801 (12.69)*
Other	*1,691 (9.42)*	*497 (6.05)*	*418 (6.17)*	*390 (6.19)*
Prison job	*12,767 (71.38)*	*5,907 (71.20)*	*4,804 (70.94)*	*4,468 (70.87)*
Program participation[a, b, c]	*10,510 (58.96)*	*5,652 (68.24)*	*4,666 (68.99)*	*4,335 (68.77)*
Natural log of time served[a, b]	3.05 (1.39)	3.60 (1.20)	3.63 (1.16)	3.65 (1.17)
Prior incarceration[a, b]	*6,626 (47.57)*	*4,437 (52.20)*	*3,596 (53.09)*	*3,344 (53.05)*
Extra-legal Factors				
Male[a, b]	*14,297 (78.62)*	*6,812 (82.07)*	*5,603 (82.70)*	*5,211 (82.66)*
Race[a]				
White, non-Hispanic	*6,362 (35.04)*	*2,858 (34.49)*	*2,317 (34.20)*	*2248 (35.66)*
Black, non-Hispanic	*7,240 (39.87)*	*3,591 (43.34)*	*2,978 (43.96)*	*2673 (42.40)*
Hispanic	*3,428 (18.93)*	*1,305 (15.75)*	*1,057 (15.60)*	*987 (15.66)*
Other	*1,117 (6.15)*	*532 (6.42)*	*423 (6.24)*	*396 (6.28)*
Control Variables				
Facility	--	--		--
Federal	*3,686 (20.27)*	*1,083 (13.05)*	*944 (13.93)*	*882 (13.99)*
Log of age	3.54 (0.29)	3.50 (0.29)	3.50 (0.29)	3.50 (.029)

NOTES: Values are mean and standard deviation in parentheses; Italic values are frequency and percentage in parentheses

[a] Significant differences in means across full sample and selection-group subsample
[b] Significant differences in means across selection-group subsample and dependent variable subsample
[c] Significant differences in means across dependent variable subsample and remaining after list-wise deletion of missing data

Table A2. Heckman Ordered Probit Model Completed with Multiple Imputation of Missing Data with Huber White Cluster robust standard errors (based on 326 groups); Dependent Variable = Sanction Severity Scale

	Selection Model			Full Model			DF[d]
	Coef	**SE**	**z**	**Coef**	**SE**	**z**	
Legal Factors							
Most serious instant misconduct offense[a]							
Security/order violation				-.200	6.24	-0.32	<.000
Drug/alcohol				.651	6.21	0.10	<.000
Property/contraband				.149	5.02	0.30	<.000
Assault: inmate				.553	4.70	0.12	<.000
Assault: staff				.490	5.29	0.93	<.000
Prior misconduct History				-.014	1.02	-0.14	<.000
Quasi-legal Factors							
Offense of conviction[b]							
Drug							<.000
Property/financial							<.000
Public order/misdemeanor							<.000
Other							<.000
Prison job	-.086	3.28	-0.26	-.143	3.06	-0.39	<.000
Program participation	.231	2.99	0.71	-.105	3.72	-0.28	<.000
Time served	.478	2.07	0.23	-.020	3.80	-0.53	<.000
Prior incarceration	.232	2.96	0.78	.048	3.43	0.14	<.000
Extra-legal Factors							
Male	.072	5.74	0.13	.084	1.71	0.11	<.000
Race[c]							
Black							<.000
Hispanic							<.000
Other							<.000
Controls							
Facility	.000	.000	0.38	.000	.000	0.71	<.000
Federal	-.523	8.50	-0.62	.405	0.57	0.42	<.000
Age	-.027	1.72	-0.15	.002	.003	0.59	<.000
Exclusion Restrictions							
Mental health scale							
1							
2							
3							
4							
Negative affect	.353	2.66	0.13				
Suicide							
Only thought about it							
Prior attempt							
GED or HS diploma	.088	2.56	0.34				
Married	-.160	3.24	-0.49				
Constant	-1.13	.117	-9.68***				
Rho	-.234	.115					
Cut 1				-1.59	.168	-9.44***	>240,000
Cut 2				-.292	.174	-1.68	>162,000
Cut 3				.042	.180	0.23	>164,000
Cut 4				.962	.196	4.91***	>159,000
AthRho				-.238	.122	-1.96*	>84,000
Wald χ^2	cannot calculate						
Psuedo log likelihood	cannot calculate						
Wald test – independence of equations	χ^2 = cannot calculate						