ABSTRACT

HAGEWEN, RACHEL ELSA. A Study of Infraction Specialization: Validating a Typology of Infraction Behavior Using Prisonization, Importation and Social Control Theories. (Under the direction of Dr. William R. Smith.)

The purpose of the current research is to examine infraction behavior in North Carolina Prisons by creating a typology of infraction of behavior and modeling the occurrence of the specific types of infractions, seeking evidence for and against possible infraction specialization. There are three specific phases of analysis. First, exploratory factor analysis is conducted to create a typology of infractions. Second, a Markov model is created to examine the extent of infraction specialization. Finally, hierarchical linear modeling logistic regression is used to both discover how three theories – prisonization, importation and social control – predict the occurrence of the different infractions types identified in the first phase of the analysis and as well as to help partially validate the infraction typology presented. Hierarchical linear modeling logistic regression results indicate that there are different predictors for the different infraction types, supporting the need to distinguish between them. Further, the Markov Model used to examine change of behavior over time supports limited specialization in infraction careers and shows that infraction behavior is not random. Overall, there is moderate support for the proposed typology and for the presence of specialization in infraction careers.

A STUDY OF INFRACTION SPECIALIZATION: VALIDATING A TYPOLOGY OF INFRACTION BEHAVIOR USING PRISONIZATION, IMPORTATION AND SOCIAL CONTROL THEORIES

by
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DEDICATION

This dissertation is dedicated to Kellie, my partner, for her love and support, and to my son, Derek, who is one of my greatest inspirations.

BIOGRAPHY

Rachel Elsa Loaiza Hurtado Hagewen was born April 17, 1978 in Urubamba, Peru. She was adopted at nine months of age by the Hage family and moved to Grand Junction, Colorado. She received her elementary and secondary education in Summit County, Colorado and graduated from Summit High School with honors in 1995. Following high school, she earned her B.A. in Psychology and Sociology from Adams State College in 1998. She entered the graduate program at Kansas State University in the fall of 1998, receiving a Master's of Arts in Sociology in May 2000. She completed her education at North Carolina State University, earning a PhD in Sociology in May 2007. Presently, Ms. Hagewen resides in Lincoln, Nebraska with her newborn son and her partner of 11 years.

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Chapter One

Statement of the Research Problem

Introduction

Prison confinement has long been a popular subject of interest for sociologists. Continued interest in the subject is particularly relevant today as imprisonment rates continue to increase throughout the United States, and because the United States incarcerates a higher percentage of its population than any other industrialized country in the world (Kuhn 1998; Reiman 1995; Smith 2004; Tonry 1999). Inmate behavior is one area of interest within the prison literature. Specifically, the study of how people react to prison life and what predicts how inmates adapt to prison has been widely studied (e.g., Clemmer 1940; Irwin and Cressey 1962; Sykes 1958; Toch 1977; Wheeler 1961). Inmate misconduct has been used by many researchers to measure inmates' adjustment to prison (Cao, Zhao, and Van Dine 1997; Harer and Steffensmeier 1996; McCorkle, Miethe, and Drass 1995; Sorensen, Wrinkle, and Gutierrez 1998; Steinke 1991). It is important to examine inmate misconduct as inmate misbehavior affects the prison order (Flanagan 1980; Wooldredge 1991), and high rates of inmate infractions, especially violent infractions, threaten the safety of other inmates and correctional staff (Goetting and Howsen 1986; Patrick 1998). The fact that some infractions are more serious than others, and thus worthy of more concern, leads to the question of how types of infraction behavior can be usefully distinguished.

The focus of the current research is whether or not differentiating types of prison infractions can be justified. There are three specific phases of analysis. First, factor analysis is conducted to create a typology of infractions. Second, a Markov model, a model to examine change in behavior over time, is created to examine the extent to which offenders “switch” from one type of prison infraction to another on successive infraction events, allowing for the detection of infraction specialization. Finally, hierarchical linear modeling (HLM) logistic regression is used to, first, discover how three theories -- prisonization, importation and social control -- predict the occurrence of the different infractions types revealed in the first phase of the analysis and, second, to help validate the infraction typology, presented below (by assessing its construct validity – discussed below – Carmines and Zeller 1979:22-27). A summary of the three theories and how they apply to the present research is discussed in chapter two. The importance of creating a typology of infraction behavior within prisons to better examine infraction specialization is discussed below.

Focus of Research: Specialization and Typologies

The more important contributions of the current research are the construction of a typology of infraction behavior, validation of the typology through “construct validity” (Carmines and Zeller 1979), and a limited examination of the extent of infraction specialization within prison. Infraction typologies are potentially useful when looking at infraction behavior for two reasons. First, infraction typologies are necessary to determine if there is behavioral specialization. If inmates or offenders specialize in some forms of behavior, a typology to identify those forms of behavior is useful. A natural question to ask, contingent upon the development of a typology is whether or not offenders specialize to some degree? Second, a typology of infraction behavior may enable researchers to better predict the occurrence of infraction behavior. If, in fact, offenders tend to specialize in some forms of behavior over others, then differentiating those forms of behavior may lead to more accurate prediction of behavior. (Of course, if offenders do not specialize, then the prediction of one type of behavior should be the equivalent to the prediction of another, in terms of degree of accuracy). This dissertation argues that the concept of construct validity allows the researcher to justify differentiating types of infraction behavior. That is, not only will factor analysis be used to identify potential categories of infraction behavior, but hypothesized relationships, derived from prisonization, importation, and social control theories (as well as from more general sociological theories such as those pertaining to race, social class, and age) will be used to help determine if a behavioral typology can be justified in terms of differential prediction across the categories of the behavioral typology.

According to Carmines and Zeller (1979: 23), construct validity "is concerned with the extent to which a particular measure related to other measures consistent with theoretically derived hypotheses concerning the concepts (or constructs) that are being measured." Rosenberg's (1965) measures of global self-esteem are used to illustrate how construct validity is achieved in practice. Rosenberg's theory of self-esteem predicts that those who engage in school activities should have higher self-esteem than those who do not participate in such activities. If Rosenberg's self-esteem scale does, in fact, correlate positively with participation in school activities, then "one piece of evidence has been adduced to support the construct validity of Rosenberg's self-esteem scale" (1979:23). Because of the overriding importance of existing theory in the construct validation process, one might "speciously assume," according to Carmines and Zeller, that "only formal, fully developed theories are relevant to construct validation" (1979:23). This observation is notable in the current context because there is not yet a formal theory of offense or infraction specialization. Carmines and Zeller cite the earlier work of Cronbach and Meehl (1955): "The logic of construct validation is involved whether the construct is highly systematized or loose, used in ramified theory or a few simple propositions, used in absolute propositions or probability statements [1955: 284].” (Quoted in Carmines and Zeller 1979: 24). In fact, “construct validity is not established by confirming a single prediction on different occasions or confirming many predictions in a single study. Instead, construct validation ideally requires a pattern of consistent findings involving different researchers using different theoretical structures across a number of different studies.” (Carmines and Zeller 1979: 24) The statement that construct validity is not substantiated by a single study has implications for the objective of the current research, which is to establish some evidence for (or against) the construct validity of the behavioral typology that is proposed, and not to make a definitive claim of its validity. Moreover, the lack of an existing body of literature that indisputably lays out specific behavioral types implies that literature must be cited that is consistent or inconsistent with the findings reported in the analysis. The current research will introduce prior evidence on behavior types and their use for studying offense specialization. This being said, it is logical to discuss prior research on typologies and patterns of misconduct.

In the current research, factor analysis is the method used to derive a typology of infraction behavior. In previous research, criminal behavior has often been grouped along lines of presumed similarity. For instance, research looking at criminal behavior outside of prison has often used categories such as “violent offenses” and “nonviolent offenses” or “property offenses” and “violent offenses” (Capaldi and Patterson 1996; Cohen 1986; Ekland and Ekland-Olson 1991; Farrington 1991; Smith and Smith 1984). Research on infraction behavior within prison has commonly broken offenses into infractions against staff and infractions against other inmates (Jiang and Fisher-Giorlando 2002; Patrick 1998; Steinke

1991). Grouping offenses into different categories has served an important function in allowing researchers to classify offenses and study patterns of crime.

Patterns of Misconduct

There have been many attempts to classify offenders based on their offenses. The most evident of these attempts are classifications which can be divided into two categories: psychological characteristics (Megargee and Bohn 1979) and behavioral characteristics (Chaiken and Chaiken 1982; Clinard and Quinney 1973; Gibbons 1977; Glaser 1974; Hayner 1961). The focus of the current research is on the behavioral characteristics. Many scholars have argued that criminal typologies are important to criminological research to explore different patterns of criminal offending (Chaiken and Chaiken 1982; Clinard and Quinney 1973; Gibbons 1965, 1968, 1970; Gibbons and Garrity 1962; Smith, Smith, and Noma 1986). Typological studies seek to classify assorted criminal behavior into discrete categories of offenses. One goal has been to create accurate typologies to identify the most troublesome offenders. Another goal has been to examine the extent to which offenders specialize in committing different types of behavior. A third goal has been to learn what predicts different types of offenses. The current research attempts to identify patterns of infractions, and does not attempt to classify inmates based on their entire infraction careers. That is, no attempt will be made to classify inmates' entire infraction careers into types, but rather the current research aims at extending existing knowledge about offending behavioral typologies through an empirical study of infractions. The characteristics of the individuals and of the prison contexts in which they reside will be used to predict the occurrence of specific types of infraction behavior.

From the 1940s to the 1980s, scholars developed assorted typologies of offenders and inmates. Some noticeable works by researchers developing different criminal patterns are Gibbons (1968), Clinard and Quinney (1973), and Chaiken and Chaiken (1982). Gibbons (1968) created five types of criminal careers by trying to identify separate roles of offenses and trying to relate them to variations in the backgrounds of those who committed them. The role careers he identified are property offenders, sexual deviant criminals, "respectable citizen," murders and assualtists, and "other criminals." Clinard and Quinney (1973) created nine categories of crime, defined in terms of the dimensions of criminal career of the offender, group support of criminal behavior, correspondence between criminal behavior and legitimate behavior patterns and societal reaction. A few of their types are occasional property crime, conventional crime and political crime.[1] Finally, Chaiken and Chaiken (1982) grouped offenders into ten types, defined by public perception of the types of crimes committed, annualized rates of committing specific crimes and stability of committing specific crimes over time. A few of their types are violent predators, mere assaulters and drug dealers.[2] Note that the above typologies are focused on offenses committed outside of prison. Within prison, a few classic typologies of offenders have been offered by Schrag (1961) and Sykes (1958). Schrag identified five types of inmates to capture the loyalty attachments to the inmate subculture. He labeled the types "square John", "right guy", "ding", "outlaw", and "politician". For instance, the "right guy" label was given to an inmate

[1] A complete list of the offender types offered by Clinard and Quinney (1973) is: violent personal criminal behavior, occasional property criminal behavior, public-order criminal behavior, conventional criminal behavior, political criminal behavior, occupational criminal behavior, corporate criminal behavior, organized criminal behavior, professional criminal behavior.

[2] A complete list of the types of offenders offered by Chaiken and Chaiken (1982) is: Violent predators, robber-assaulters, robber-dealers, low-level robbers, mere assaulters, burglar-dealers, low-level burglars, property and drug offenders, low-level property offenders and drug dealers.

who was loyal to the inmate subculture, where, the label “square John” was used to indicate an inmate was an alien in the system. Sykes labeled types of inmates based on different roles they played in prison, such as “ball buster”, “gorilla”, “merchant”, and “center man”.

Starting in the 1980s, such methods as clustering data or group-based analysis have allowed criminal career researchers to statistically group offender behavior and create offender typologies. Empirically derived typologies are one way to classify offenders (Glaser 1974). In fact, Chaiken and Chaiken’s (1982) typology of offenders was derived from factor analysis.

In the 1990s and 2000s, researchers such as Steinke (1991), Bursik (1980), and Jiang and Fisher-Giorlando (2002) examined different types of infraction behavior within prison. Note that these types are not empirically derived, but instead are conceptually derived. Both Steinke (1991) and Bursik (1980) examined four types of infraction behavior, and Jiang and Fisher-Giorlando (2002) looked at three. Steinke (1991) studied staff, inmate, self and property infractions. Bursik (1980) categorized infractions into personal injury, personal property, impersonal property and other. Jiang and Fisher-Giorlando (2002) put infractions into three types: violent versus non-violent, infractions against staff and infractions against inmates. Putting infractions into different types of behavior has allowed these researchers to see that there are different predictors for different types of infractions.

The focus of the research just discussed has been predicting different types of infractions, which is similar to the present research. The current research, however, strives to correct some of the methodological shortcomings of previous studies in this area. In previous research, the infraction types are often not empirically derived, but instead defined by the researcher. Additionally, those researchers do not attempt to study infraction specialization per se, but rather simply assume it exists. The research that most closely coincides with the proposed research of examining misconduct careers within prison is limited. It has been acknowledged by others that examining different types of criminal careers, such as infraction "specialists" in prison is in the beginning phases of development in the literature (DeLisi 2003a). A couple of examples are the research of DeLisi (2005), Craddock (1996), Finn (1993) and Barak-Glantz (1983). However, even these pieces are focused more on time of misconduct patterns than on infraction classifications or infraction specialization. DeLisi offers an offender classification typology based on number of infraction violations. For instance his classifications are: innocents, once-only offenders, minor recidivists, Wolfgang chronic and "DeLisi extreme chronic."[3] Barak-Glantz studied the position of inmate infractions during their incarceration, Finn tracked the prison misconduct careers of mentally retarded inmates, and Craddock compared men and women inmates to see if their patterns of misconduct were similar. Although not the main focus of her research Craddock was able to detect specialization within prison. Her findings indicated specialization for substance abuse infractions for women and assault and drug/alcohol-related infractions for men.

There are two important reasons for grouping infractions into types. First, research shows that there are different predictors of the different types of infractions that are not always seen when looking at all infractions together (Bursik 1980; Jiang and Fisher-Giorlando 2002; Harer and Steffensmeier 1996; Steinke 1991). Breaking infractions into different types allows for a more specific examination of infraction behavior. In this case,

[3] DeLisi's offender classification typology is: "innocents" have no violations, "once-only offenders" have one violation, "minor recidivists" have 2-4 violations, "Wolfgang chronic's" have 5-29 violations and "DeLisi extreme chronic's" have more than 30 violations.

the assumption is that there are differences in whom, why, or what circumstances an infraction is committed. For example, it may be that there is no race effect when looking at all infractions together, but when infractions are broken into different groups, such as violent versus non-violent, there is some evidence that African Americans are more likely to commit violent infractions and whites are more likely to commit non-violent infractions (Harer and Steffensmeier 1996).

It is also important to cluster infractions into types to allow researchers to examine the extent of offender specialization. The vast majority of research on specialization defines specialization as referring to types of offenses being repeated or offenders engaging in specialized clusters of criminal behavior (Britt 1990, 1996; Bursik 1980; Durham 1988; Piquero et al. 1999; Schwaner 1998; Tunnell 1988). Therefore, the creation of infraction types is a necessary step in order to examine the extent of specialization.

Specialization

The idea of criminal offense specialization within the field of criminology has been a topic of interest over the past 70 years (Blumstein et al. 1988; Blumstein, Cohen, and Farrington 1988; Britt 1990; Bursik 1980; Durham 1988; Holland and McGarvey 1984; Piquero et al. 1999; Schwaner 1998; Shaw 1930; Wolfgang, Figlio, and Sellin 1972). Interest in specialization within crime types is rooted in the research of criminal career advocates. In fact, an important component of the criminal career's model is offense specialization (Blumstein et al. 1988). The importance of the criminal career literature for the proposed research is what it offers in terms of methods and models. Insights from this literature offer a guide of what methods to use to detect specialization, what patterns one should expect to find, and the importance of such work. For instance, if criminal careers can be better understood, especially specialization, then there is the possibility that these offenders can be identified early in their careers to prevent their crimes.

Unfortunately, researchers and theorists have not agreed on the extent to which offense specialization exists, or even what constitutes offense specialization. It has been widely claimed in the criminological literature that offenders do not specialize in the criminal behaviors in which they participate (Gottfredson and Hirschi 1990). Such critics point to research showing that offenders demonstrate considerable versatility in their behavior over the course of their criminal careers (DeLisi 2003b, 2005) and argue that researchers are biased toward finding specialization (Britt 1994; Simon 1997). Conversely, other scholars claim they have found statistical evidence of offenders who recurrently engaged in similar types of offenses supporting criminal specialization (See Blumstein, Cohen, and Farrington 1988; Brennan, Mednick, and John 1989; Britt 1996; Bursik 1980; Lattimore, Visher, and Linster 1994; Piquero et al. 1999; Schwaner 1998; Schwaner 2000).

In general, there are two main camps in criminology when it comes to the specialization controversy. On the one side, there are those who suggest that offenders specialize in their behaviors. On the other side, there are those who are adamant that offenders do not specialize in their behaviors and claim that criminal behavior is diverse. In spite of research that has found evidence of specialization within a broader arrangement of offending versatility, some control theorists, such as Gottfredson and Hirschi, argue that everyone is tempted to commit a wide variety of deviant behaviors, but some are socialized to resist those temptations and succeed in their self control. Those who do not succeed are expected to exhibit a variety of delinquent and deviant behaviors as they fail to control a wide variety of deviant impulses that are “natural”. These control theorists believe there is theoretical justification for much versatility among offenders in the criminal acts in which they engage, meaning that, "…offenders commit a wide variety of criminal acts, with no strong inclination to pursue a specific criminal act or pattern of criminal acts to the exclusion of others." (Gottfredson and Hirschi 1990:91). Offenders are then labeled "Jack-of-all trades" offenders, not specialists.

The research yielding support for specialization makes it hard to dismiss that specialization does indeed exist to some degree. Piquero et al. (1999) recently concluded that the research findings on criminal behavior indicate "some level of specialization amid a great deal of versatility" (p.276). A decent amount of research examining offense specialization supports this claim (Armstrong et al. 2004; Britt 1990, 1996; Durham 1988; Holland and McGarvey 1984; Kempf 1986, 1987; Schwaner 1998; Tunnell 1988). Specialization has also been reported in several studies of arrest data (Bursik 1980; Lattimore, Visher, and Linster 1994; Moitra 1981; Rojek and Erickson 1982; Smith and Smith 1984; Wolfgang, Figlio, and Sellin 1972). Outside of the prison setting, specialization has been most prevalent for drug offenses, auto theft and fraud (Blumstein et al. 1988). Therefore, while specialization has been reported, it is not uniformly strong for all offense types. For instance, some research, going against the view of "escalation" (defined as the tendency for offenders to move to more serious offense types as offending continues) has found that more impulsive, violent crimes tend to be among the least specialized (Blumstein et al. 1988; Piquero 2000). However, others have found support for violent specialists (e.g., Brennan, Mednick, and John 1989; Schwaner 1998).

With such a noticeable appearance of specialization in the literature, the claim that offenders are completely versatile in the crimes they commit is hard to accept. In fact, recent research has found support for specialization and argues that weak methodology is to blame for limited support for specialization in other studies (Deane, Armstrong, and Felson 2005; Sullivan et al. 2006). Thus, it seems quite likely that specialization does exist, but to varying degrees. Problems with how to define specialization, inconsistency in crime category classifications and limits in the statistical analysis used when studying specialization have restricted our current understanding of the extent of specialization. In addition, few studies have examined infraction specialization within prison. When studying criminal careers, time in prison has been usually seen as a temporary or permanent interruption of the career (DeLisi 2003a). Therefore, this population of known offenders has often been neglected in the specialization research. Further, theories used to study prison adjustment have been largely ignored in this area. This dissertation argues that the theories used to study prison adjustment, such as prisonization theory and importation theory, provide a theoretical framework in which to study specialization. These theories will be explicated below as will be their implications for specialization in offending behavior.

Studies of specialization in offending behavior begin with typologies of offending behavior. Recall that an assumption when using typologies is that behaviors tend to occur more in some offenders' careers than in others, allowing for offenses to be grouped based on tendencies for offenses to co-occur.

The typology presented in the current research plays a major role. Empirically derived, it indicates a degree of specialization, in the sense that infraction behavior is specialized enough to allow for the co-occurrence of other infractions within the same inmate's infraction history. That is, inmates who commit a specific type of infraction will not necessarily commit only one type of infraction but may also commit other specific types of infractions. Yet, there will be a tendency for the inmate to commit one type of infraction over another type. Within the current research a Markov Model is used to examine the extent of specialization by examining whether inmates have tendencies to repeat the same type of infraction, and, if not, to see what type of infraction they switch to.

Finally, hierarchical linear modeling logistic regression is used to assess the validity of the typology. As discussed above, it is argued that there will be different predictors of the different types of infraction behaviors. If different types of infractions could be predicted equally well by the same factors, then there would be no need to differentiate between those types of infractions. The hierarchical linear modeling logistic regression will allow the current research to examine these issues.

Research Overview

The overriding assertion of this research is that a typology of infraction behavior within prisons is a useful step in order to better predict infraction behavior and to examine infraction specialization. After constructing a typology of infraction behavior 1) a Markov model is created to see if inmates specialize in committing certain types of infractions and 2) theories such as prisonization, importation and social control, are tested to reveal how they predict different types of infraction behavior. By using hierarchical linear modeling (HLM) logistic regression, individual-level and prison-level measures of these theories can be used as predictors.

The current research looks at which individual characteristics make it more likely that a certain type of infraction will be committed and in what prison context this misbehavior occurs. For instance, we may find that confrontational and violent infractions are more likely to be committed by African American inmates (measured at the individual-level), but less likely to be committed in a prison in which there is a higher percent of educated inmates (measured at the aggregate-level). Using the empirical models in HLM logistic regression will also help validate the typology of infraction behavior by showing if there are different predictors for the different types of infractions and if such differences are consistent with some patterns of behavior that others have found. For instance, if one can predict the occurrences as accurately with a "general" model as with a model that is specific to types of infractions, then one has not validated the behavioral typology. This indicates there is no need to differentiate between types of infraction behavior. However, if there are different predictors of each infraction type, this would then indicate that types of infractions are necessary.

In sum, the present research addresses the following four related areas: (1) identify a typology of behavior, (2) evaluate whether offenders specialize in the types of infractions they commit, (3) validate the typology of infraction behavior by demonstrating how predictive factors vary across types, and (4) discuss the theoretical implications of the findings that models predict types of behavior differentially. Addressing these issues contributes to the existing literature on inmate behavior within prisons by furthering our understanding of such behavior.

Contribution of Research

Although there are many studies on prisoner adjustment to confinement, the current study contributes to the literature in several important ways. First, this research creates a unique typology of infraction behavior. This distinguishes the current research from some prior research on infraction behavior that bunches all infractions together to look at general misbehavior (Flanagan 1980; Goetting and Howsen 1986; McShane and Williams 1989;

Sorensen, Wrinkle, and Gutierrez 1998) or that separates all behavior into two broad categories (i.e., severe versus not severe, violent versus non-violent), not derived from empirical analysis (Cao, Zhao, and Van Dine 1997; Finn 1995). Second, the current research examines the extent to which inmates specialize in committing the different types of infraction behaviors. The examination of infraction specialization within prisons is practically non-existent; therefore, the study of infraction specialization is an important contribution of the following research. Finally, the current research uses hierarchical linear modeling (HLM) logistic regression to discover the application of three theoretical models -- importation, prisonization and social control -- to the different infraction types. Although previous research has tested importation, social control and prisonization theories, the focus of much of this research has been on misbehavior in general and not testing predictions of different types of behavior. Also, using HLM logistic regression allows for the inclusion of both individual-level and prison-level predictors simultaneously. Furthermore, the majority of prior research looking at inmate populations has tended to test only importation and prisonization theoretical predictions. For these reasons, it is argued here that the research is a necessary and important contribution to the area of prison research.

Overview of the Following Chapters

The remaining chapters will present in more detail the research process and the findings of the research conducted. Specifically, Chapter Two discusses the theories to be tested – prisonization, importation and social control theories - and provides a review of the literature relevant to the research conducted. Chapter Three presents the research hypotheses along with a discussion of the study design, data and analysis. Chapter Four discusses the results of the factor analysis, introducing the types of infraction behavior which are the focus of the current research. Assessing the validity of the infraction types is also discussed in this chapter. Chapter Five presents the results of the Markov model. Whether or not specialization of infraction behavior is supported is discussed within this chapter. The hierarchical linear modeling (HLM) logistic regression results are presented in two chapters. Chapter Six presents the HLM logistic regression level-1(individual-level predictors) results. A HLM logistic regression model is presented for five different infraction types. Chapter Seven presents the HLM logistic regression level-2 (prison-level predictors) results. Again, a HLM logistic regression model is presented for each of the five infraction types. At the end of both of these chapters a comparison of the five infraction types is discussed. Also, each chapter includes a discussion of what theoretical measures are predictive of the different infraction types and which theories are better predictors of each infraction type. Finally, Chapter Eight provides the final discussion and conclusions.

Chapter Two

Theoretical Framework and Review of the Literature

Introduction

The current study draws upon three prominent prisoner adaptation theories -- prisonization, importation, and social control theories -- to explain deviant behavior within prison. These theories traditionally play an important role in prison misconduct research. In particular, prisonization and importation theories resulted from classic studies interested in individual adjustment to prison life (Clemmer 1940; Irwin and Cressey 1962; Wheeler 1961). Prisonization theory contends that adjustment to prison is dependent on how individuals react to the hardship imposed by the prison experience and context. Prison misbehavior is merely an adaptation to prison society and confinement (Clemmer 1940). According to prisonization theory, inmates are able to better adapt to prison by creating a subculture that is anti-staff to provide protection for their self-esteem that is especially vulnerable because of incarceration. Infraction behavior generally consists of behavior consistent with the anti-staff inmate subculture. Importation theory contends that pre-prison experiences, particularly those involving the adoption of criminal values and other personal characteristics affect inmate adjustment to prison. Prison misbehavior is a result of pre-prison experiences and/or personal characteristics supportive of such behavior. Importation theory tends to focus on imported characteristics that would account for variations in the inmate subculture (typically variables such as race, ethnicity, and gender). Social control theory, as it applies to prisons, is sometimes referred to as "informal" social control. According to informal social control theory, attachment and commitment to conventional others and societal institutions give people (including inmates) a "stake in conformity," such that they refrain from behavior that may jeopardize the respect or the relationship itself of significant others or of societal institutions.

Importation theory contends that characteristics of the individuals imported into the prison at the time of incarceration are important in determining what infraction behaviors are committed there. This includes both the subcultural value and belief systems ingrained within the individual, captured by the proxies of race, social class and age, as well as, the bonds to conventional society, social control indicators, captured by marital status and level of education. Clearly there are additional values and beliefs derived from marital status and education imported into the prison by the individual. However, marital status and education, as achieved statuses, clearly demonstrate an intentional tie, initiated by the individual, made between the individual and conventional society before incarceration. Therefore, although marital status and education are "imported", they affect behavior by different processes. Informal social control theory implies that these bonds to conventional society impact infraction behavior despite their formation prior to incarceration, as long as they remain in tact during incarceration. Therefore, the social control indicators (e.g., marital status and education) go beyond what is intended by the basic premise of importation theory and instead are considered separately as measures of social control, although there is, admittedly, overlap between these theories.

In recent years, some researchers (e.g., Wooldredge, Griffin, and Pratt 2001) have focused on measures of informal social control as they apply to the inmate's experiences in prison. For example, one of the informal social characteristics that may affect an individual in prison is a bond to conventional others (e.g., marriage partners). This dissertation discusses these attachment bonds, as well as commitment bonds (especially prior educational attainment) as informal social control variables. Social bonds to conventional society, such as marriage, or educational attainment levels, act as barriers limiting inmates' participation in infraction behavior in prison.[4]

All three theories -- importation, prisonization and social control theories -- will contribute to the current research to explain why inmates commit different types of infractions. These theories themselves draw upon a broad range of prior theories. Prisonization theory, for example, is based in part on self-esteem theory (Rosenberg et al. 1965; Kaplan 1975; Cohen 1955; see discussion below). Furthermore, prisonization and social control theories draw upon more general theories of socialization. The current research draws upon these and other theoretical traditions to help interpret differences in the types of infraction behaviors that the prisoners commit. For instance, prisonization theory's propositions about the "pains of imprisonment" affecting inmate behavior overlaps with strain theory by contending that the "pains of imprisonment" create a stressful environment that inmates must cope with. Also, cultural concepts are often used to interpret the effects of race and social class variables on infraction behavior. Note that the goal of the current research is not only to test the predictive ability of each, but to also clarify whether there are different causal processes involved for different infraction types. Finally, one issue that will be central to the modeling of several types of infraction behavior is whether inmates specialize in the infractions they commit or participate in a range of different infractions.

[4] It should be noted that some others have also discussed processes of formal social control in the prison (Smith 1984). However, in the current context no variables are available to measure uniquely formal social control processes. For example, others have measured the extent to which inmates participate in rehabilitative programs (a measure of their exposure to conventional, or "pro-staff" subcultures in prison). No such measures are available here. It is assumed that although prison staff attempt to institute rules and regulations to promote conformity to conventional values, we have no measure of the effectiveness of their efforts other than the infraction behavior itself. Thus, no claim is made here to capture aspects of formal social control processes.

The current research argues there are theoretical reasons to assume there will be a degree of specialization.

Prisonization Theory

In 1940 Clemmer introduced the process of prisonization or adaptation to the prison culture. This process plays itself out as inmates gradually begin to understand what constitutes acceptable behavior in the prison environment. Specifically, Clemmer defined the concept of prisonization as “the taking on, in greater or lesser degree, the folkways, mores, customs, and general culture of the penitentiary (1940: 299).” An assumption of prisonization theory is that inmates experience a mixture of frustrations, deprivations and mortifications that come with living in a “total institution” (Goffman 1961; Sykes 1958). Thus, it is assumed inmate behavior is shaped by the prison community. This happens as inmates learn, through socialization, how to “act appropriately” in prison – by conforming to the values and rules of the inmate subculture. The consequences of prisonization, for Clemmer, meant that criminality blossomed and strengthened which “…make the inmate characteristic of the criminalistic ideology in the prison community (Clemmer 1940:300).”

Expanding on Clemmer’s work, Sykes (1958) provided the groundwork for this model by asserting that the conditions of incarceration are so painful that the prisoner must create an entirely new social outlook in order to deal with prison conditions. Inmates being deprived of many basic needs, such as liberty, autonomy, material goods and heterosexual relationships, results in a prison subculture evolving within the institution. Sykes argued that these deprivations are inherent in imprisonment. In general, all inmates experience what it feels like to have their individual identities stripped from them when they enter prison. This common experience creates a shared sense of suffering that produces an inmate subculture

(Sykes and Messinger 1960). Specifically, challenges to prisoners' self-image and self-esteem resulting from these "pains of imprisonment" lead to the creation of the subculture. Also, because of the structure of the prison, inmates realize that they cannot resolve the problems they are confronted with by themselves. Instead, the inmate learns that s/he is just one of many similarly situated prisoners who share a common problem in trying to adjust to confinement.

An implicit contention of prisonization theory is that strain causes inmates to misbehave within prison. Misbehavior can be explained in part as a reaction to the strain experienced in prison, such as the strain of confinement, loss of freedom, and discomfort. Note that this contention is grounded in the broader strain theories of crime/delinquency outside of prison, which have tended to focus on lower-class individuals and their tendency to commit crime. Formally, Merton (1938) explained crime as one reaction of lower-class individuals to the strain brought about by valued cultural means they could not obtain. Cohen (1955) also explained crime as one reaction of lower-class adolescent males dealing with the strain of an inability to gain status and acceptance in conventional society. Strain theory, as proposed by these early theorists, has been influential to prisonization theory's contention of "the pains of imprisonment" causing strain, and thus, misbehavior (Johnson and Toch 1982; Lombardo 1982). Prisonization theory is also much like the cultural strain theory of crime behavior in that they posit the existence of subcultures centering around different behaviors (Cloward and Ohlin 1960). While Cohen (1955) focused on a single delinquent subculture, Cloward and Ohlin saw several subcultures depending on the illegitimate opportunities in their neighborhoods. This relates to the prisonization theory notion that some prisons may be influenced by the prevalence of different forms of infractions which could affect the chances that the individual inmate will participate in specific types of infraction behavior.

A basic premise of prisonization theory is that anyone can be “prisonized” and thus commit infractions consistent with the norms of the inmate subculture. In regard to specialization, such factors seem to point to a diversity of deviant behavior as a possible response. However, prisonization theory notions on specialization are not so straightforward. On the one hand, the theory contends that the prison context is ripe for prison misbehavior and suggests that inmates will engage in a wide variety of offense types. On the other hand, the theory also seems to imply that inmates are motivated to commit more of some types of infractions than others. For example, because of the “anti-staff” orientation of the prison subculture, one might expect that there would be more infractions committed against correctional staff. According to Sykes, the prison subculture by its very nature harbors negative attitudes, values and self concepts that are in resistance to the prison administration and staff (Paterline and Petersen 1999; Sykes and Messinger 1960; Thomas 1977). Prisonization theory contends that inmates internalize these beliefs. Prisonization, or to become “prisonized”, means inmates have taken on this way of thinking and being. If this is true, then we might expect prisonization to better predict infractions against correctional staff. However, it may also be the case that such an oppositional culture and negative attitudes lead prisoners to be aggressive (Cao, Zhao, and Van Dine 1997; Harer and Steffensmeier 1996), attack other inmates or violate other prison rules.

Also, since prisonization theory posits that many of the “pains of imprisonment” are due to the presence of other inmates (who threaten each other at times) then one might expect a prevalence of infractions of inmate-on-inmate violence. The prisonization model proposes that prison is stressful and offers oppressive conditions which lead to inmate aggression (Sykes 1958; Sykes and Messinger 1960). In fact, it has been argued that under certain conditions violence is used as a means to reduce tension (Bowker 1985). Exploitive and predatory behavior toward inmates is a way for some to deal with the "pains of imprisonment" (Poole and Regoli 1983). If this is true, then prisonization theory would also predict inmate-on-inmate violence and conflict. In this case, the inmate subculture would increase the chance of such violence. This is presumably because the anti-staff oriented subculture also is one that values "physical prowess" or toughness as an alternative value system to the staff "conventional" value system.

Finally, if we continue with the notion that inmates are motivated to commit more of some types of infractions than others it may be the case that there is more than one type of subculture that evolves from the common "pains of imprisonment." If different subcultures evolve within a prison, then it would be likely that prisons with a high prevalence of certain types of infractions would provide a normative climate to encourage more of those same types of infractions (whatever they might be).

In sum, prisonization theory contends that prison life is often so difficult that inmate behavior is an adaptive response to the realities of confinement. Therefore, examining the influences indigenous to the prison setting allows for an understanding of inmates' attitudes, values and behaviors. Such influences could be measured by variables indicating factors such as being housed in a high custody level, having served a lot of time or being housed in a prison where the average time served by all the inmates is high, having one or more prior incarcerations or being housed in a prison where there is a high percent of inmates with one or more prior incarcerations or being in a prison with a high prevalence of certain infraction types. In fact, many of these conditions have been used to operationalize prisonization theory in previous research and will also be tested in the current research.

In support of prisonization theory, research has shown that inmates in higher custody levels commit more rule violations than inmates housed in lower custody levels (Harer and Steffensmeier 1996; Stephan 1989). Specifically, McCorkle, Miethe, and Drass (1995) found that security levels are positively related to assaultive behavior. Steinke (1991) and Jiang and Fisher-Giorlando (2002) found that inmates in more secure custody levels are more likely to commit infractions against correctional staff. According to prisonization theory, because inmates in higher custody levels are more restricted and monitored more closely than inmates in lower custody levels, they commit more infractions as a way to deal with deprived conditions in higher security environments.

Other prisonization measures that have been used in previous research are time served and number of prior incarcerations. In regard to number of prior incarcerations, some researchers have found support for a positive relationship between the number of disciplinary infractions and number of prior convictions (Goetting and Howsen 1986; Johnson 1966; Wolfgang 1961). However, others have found no support for the relationship between inmate misconduct and number of sentences served (Coe 1961; Zink 1958). Prisonization theory predicts that more prior incarcerations lead to more infractions. This is because inmates with more prior incarcerations would be expected to be more deeply "prisonized" and, therefore, commit more rule violations as a way to deal with the "pains of imprisonment" and act on their anti-staff beliefs.

Time served also influences the frequency of disciplinary infractions. Much research has found that those serving short terms of incarceration yielded higher rates of disciplinary infractions than inmates with longer sentences, even in the early years of confinement (Flanagan 1980; Porporino 1986; Zamble 1992; Zink 1958). Other research, however, has found either no relationship between length of incarceration and frequency of infractions (Brown and Spevacek 1971; Sorensen and Wrinkle 1996; Wolfgang 1961) or that those imprisoned for a relatively long period of time have a higher frequency of infractions (Goetting and Howsen 1986). Prisonization theory would contend that inmates who have served more time would be more likely to commit infractions because such inmates have had more time to become “prisonized”. Having become more “prisonized,” adopting the values of the inmate subculture resisting confinement and becoming anti-staff, it would be more likely that an inmate would misbehave.

Prisonization theory also contends that inmates are influenced by aggregate-level factors, such as percent of a prison with inmates with more than one prior incarceration or the average time served of all inmates in a prison. In fact, the basic premise of prisonization theory is that the inmate subculture is important. Contextual effects are generally recognized as an important aspect of what influences behavior. A long history of research shows that crime and delinquency vary across neighborhood ecological settings (Shaw and McKay 1942). More recently, Sampson (1991) has shown that there are structural characteristics of a neighborhood that produce contextual effects on individual behavior. Recent studies continue to support the use of contextual measures in criminological research (Elliott et al. 1996; Rountree and Land 1996; Sampson, Raudenbush, and Earls 1997). Therefore, the addition of prison-level measures in the current research is necessary to better explain infraction behavior.

The current research argues that the percentage of inmates with more than one prior incarceration within a prison or the average time served of all inmates in a prison is likely to impact the normative climate of a prison resulting in a lesser or greater number of infractions occurring, depending on the make-up of the prison. For instance, prisonization theory would expect that more infractions would be committed in a prison with a higher percent of inmates with more than one prior incarceration. This is because prisonization theory contends that inmates with more prior incarcerations will be more "prisonized" -- therefore, in a prison with a higher percent of inmates with more than one prior incarceration, the inmate subculture would reflect the presence of more "prisonized" inmates, regardless of their individual incarceration history. In such a prison we would expect to see more inmates who have adopted the anti-staff values and are resisting confinement, leading to more infractions being committed. Prisonization theory suggests that the percentage of inmates with more than one prior incarceration within a prison is characteristic of the prison environment that impacts inmate behavior.

In regard to the aggregate measure average time served of all inmates within a prison, prisonization theory would lead to the expectation that more infractions will be committed in a prison where the average time served is higher. This is because prisonization theory suggests that inmates who have served more time will be more "prisonized". In a prison where the average time served is higher than other prisons, we would expect that more inmates would be "prisonized" within that prison compared to other prisons, impacting the normative climate of the prison to be more anti-staff and thus leading to more infractions. It is worth noting that at this time such aggregate-level factors as percent of inmates with more than one prior incarceration and the average time served of all inmates in a prison has not been widely examined in the research (See Frazee 2003). These factors are examined in the current research, despite having not been adequately tested to date, because they make theoretical sense.

A few other aggregate measures of interest are the prevalence of different types of infractions within a prison. Some contend that more rule infractions would be present in a facility that had more violence among inmates during incarceration (Snortum and Bodal 1985; Wooldredge 1991). Thus, it is important that the prevalence of different types of infractions within a prison be tested in the current research (these types are introduced in chapter four). This dissertation argues that an important aspect of a prison setting is the prevalence of different types of infractions committed and contends that there is variation across prisons in the prevalence of the different infraction types. According to prisonization theory, the prison environment is a key factor in affecting inmate adjustment and the prevalence of different types of infractions are an important aspect of any prison environment. Looking at these measures, the prevalence of different types of infractions, will allow for the examination of the degree and type of misbehavior within each prison and their effect on inmate behavior.

In conclusion, since the time of its conception, prisonization theory has received mixed support. Many early studies yielded findings supportive of the theory (Berk 1966, Garabedian 1963; Goffman 1961; Sykes 1958; Tittle 1969). Recent findings, however, are inconsistent (Akers, Hayner, and Gruninger 1974; Cao, Zhao, and Van Dine 1997; Ellis 1984; Goodstein and Wright 1989; Leger 1978; Light 1990; McCorkle, Miethe, and Drass 1995; Poole and Regoli 1983; Smith 1984; Thomas and Zingraff 1976). Despite inconsistent empirical support, prisonization theory has had an enormous impact on what is now known about prisons, and is criticized more for being incomplete than for being false. A significant criticism of prisonization theory is that it ignores pre-prison experiences and their impact on inmate adaptations to confinement. Importation theory was offered in light of such criticism. Importation theory takes into account individual life experiences, such as race, age, socioeconomic status, and attitudes on influencing prison behavior.

Importation Theory

According to importation theory inmates bring values, attitudes, and beliefs from their outside lives into the institution, and this is the primary base from which prison culture is formed (Carroll 1974; Irwin and Cressey 1962; Jacobs 1977). Importation theory views prison adjustment as dependent on the influence of preexisting characteristics of the individual, especially the degree to which the individual adheres to "criminal" values prior to incarceration. In other words, prison misbehavior is a result of the characteristics of inmates, such as ideas, attitudes and behaviors they import from outside of prison. Attributes imported into the prison, such as race and social class, are potentially important factors in an inmate's adjustment to prison, because they are characteristics that predate confinement and represent values, attitudes and beliefs (Irwin and Cressey 1962).

Irwin and Cressey (1962) believed that the inmate code was part of a more general code, which exists outside of prison and is imported into the prison. They observed that different subcultures brought certain values and behavior patterns with them, and that the inmate culture was influence by these subcultures to form a new one within prison. Specifically, they contributed to importation theory by describing three types of prisoners whose personalities strongly influence prison culture: the thief, the convict and the square. The thief mistrusts all authority and is usually a newcomer. The convict has spent many years in institutions and is fairly comfortable in the prison setting. An inmate falling under this type will try to use the prison system for personal gain. Finally, the square lacks an extensive criminal background and tends to disassociate him/herself from the general prison community.

Irwin further identified several patterns of inmate behavior, each one driven by the inmate's personality and values. For instance there are those who have adapted to prison, follow the rules and generally do whatever is necessary to speed up their release and then there are "disorganized" criminals who find it impossible to adapt to prison culture on any level. Wellford (1967) also found that how much individuals adhered to "criminal values" prior to incarceration determined prison adjustment.

Importation theory points to different types of inmates and different types of infractions that may be committed as a result of pre-prison characteristics or values. In general, this theory contends that inmates with different pre-prison characteristics will commit certain types of infractions, indicating a degree of specialization. The importation model suggests that specialization will be evident because there are certain individuals who will import attitudes and behaviors that are going to push them towards specialization. Research that has found support for offense specialization outside of prison is the basis of this contention. If individuals were offense specialists outside of prison, they would also be expected to be offense specialists inside prison.

There is much prior research that has detected offense specialization on offenders outside of prison (Armstrong et al. 2004; Britt 1990; Bursik 1980; Deane, Armstrong, and Felson 2005; Durham 1988; Guerette, Stenius, and McGloin 2005; Holland and McGarvey 1984; Kempf 1986; Schwaner 1998; Tunnell 1988). For instance, several studies focusing on arrest data find specialization (Blumstein and Cohen 1979; Bursik 1980; Lattimore, Visher, and Linster 1994; Moitra 1981; Rojek and Erickson 1982; Smith and Smith 1984; Wolfgang, Figlio, and Sellin 1972). Some find that specialization is strongest for property offenses, including burglary and theft (Lattimore, Visher, and Linster 1994). Other researchers have found support for violent specialists (Brennan, Mednick, and John 1989; Schwaner 1998). Specifically, Lynam, Piquero, and Moffitt (2004) found evidence of violent specialization. In the classic study of the Philadelphia birth cohort by Wolfgang, Figlio, and Sellin (1972) only weak evidence of specialization was claimed; however, three re-analyses of the Philadelphia data (Cohen 1986; Stander et al. 1989; Kempf 1986) found specialization to be greater than originally thought. A recent study by Deane, Armstrong, and Felson (2005) claims support for specialization because they found that violent offenders are more likely to engage in additional violent offenses and nonviolent offenders are more likely to engage in additional nonviolent offenses. They argue that the reason offender specialization has not been detected more often than it has is because of weak methodology. Even more recently Sullivan et al. (2006) also finds support for specialization. They state, “the evidence here suggests that short-term offense specialization is not a methodological artifact but rather a reflection of an enduring empirical reality” (2006: 222). In sum, the support for offense specialization outside of prison leads the current research to contend that there are certain inmates who have a tendency to specialize in the offenses they commit, and that they will import this tendency into prison and be likely to specialize in the infractions they commit.

In general, previous research has found much support for importation theory (Cao, Zhao, and Van Dine 1997; DeLisi 2003a; Harer and Steffensmeier 1996; Poole and Regoli 1983; Sorensen, Wrinkle, and Gutierrez 1998; Wright 1991). Common measures of importation theory tested in the research are age, race, social class, and presenting offense. According to importation theory, the characteristics of age, race and social class carry with them certain beliefs, values and attitudes. At the time of incarceration, the individual imports these beliefs, values and attitudes into the prison. The current research uses age, race and social class as proxies for cultures and values imported into prison that affect behavior. For instance, the cultural model maintains that crime is a product of conformity to a distinctive culture. The basic idea is that crime stems from normative conflict within society. In a complex society there are many groups with arguably different norms, some cultures sanction lawful behavior and some cultures sanction unlawful behavior. Within each group individuals are consistently associating with the definitions that support lawful or unlawful behavior, which ever the group they belong to goes by, and thus are likely to act in terms of them (Kornhauser 1978). Note that this is very similar to the notions of differential association theory, which proposes that delinquency is learned, as is any other behavior, through associations with significant others and reference groups (Sutherland 1947). More specifically, through interacting with others, an individual learns techniques for engaging in delinquency and definitions of the law, which include attitudes, norms, beliefs and rationalizations about lawbreaking. These definitions of the law are cultural aspects of crime and delinquency that individuals import into prison and affect infraction behavior.

Therefore, the current research tests these measures (age, race, social class and presenting offense) and adds a few aggregate measures, not commonly tested, to examine their effects on prison infractions. Prior research has established age as a correlate of prison misbehavior. In fact, the relationship between age and misconduct among prison inmates is very similar to the age crime curve of rule breaking in the general population. More specifically, the inmate's age at data collection (Craddock 1996; Ellis, Grasmick, and Gilman 1974; Goetting and Howsen 1986; Jensen 1977; Johnson 1966; Light 1991; Myers and Levy 1978; Toch, Adams, and Grant 1989; Wolfgang 1961; Wooldredge, Griffin, and Pratt 2001), age at commitment (Coe 1961; Flanagan 1983) and age at last sentencing (Zink 1958) have all been shown to be inversely correlated with misconduct among prison inmates. Theoretically many researchers explain this relationship in much the same way as the broader age-criminality relationship (Zink 1958; Wolfgang 1961; Johnson 1966; Ellis, Grasmick, and Gilman 1974; Flanagan 1983). For instance, some criminologists such as Gottfredson and Hirschi (1990) argue that the association between age and crime is inexplicable with social science variables and contend that the age crime relationship can only be explained by the biology of aging itself. Others have attempted to explain the age crime relationship in terms of support for the idea that something is being imported into prison. However, it is unclear what, exactly, is being imported. Perhaps different normative processes are at work in younger and older individuals. In a study by Jensen (1977), he argues that his research supports the idea that there are age-related normative orientations that affect behavior in prison. He claims that age differences in rule violations are due to differences in norms and values. For instance, it may be that older people have a better understanding of social norms than younger people. It is also possible that older individuals import more "life experience" into prison which may make them more likely to conform to the rules and have more respect for correctional authority.

Race, measured at the individual level does not correlate as consistently with misbehavior as does age. Research, however, considers race just as often. The argument is that African Americans import values supportive of violence into the prison, therefore making them more likely to commit violent infraction types. Harer and Steffensmeier (1996) contend that a higher rate of violence in prison by African Americans is due to cultural differences. There is much ethnographic research on African Americans outside of prison which supports the view that inner-city African Americans hold more favorable attitudes toward the use of violence (Anderson 1994; Rainwater 1970; Suttles 1968). The results from quantitative research are mixed. A greater propensity for violence among African Americans compared with whites is reported by some (Cazenave and Straus 1990; Wolfgang et al. 1985), whereas other studies report no racial differences (Ellis, Grasmick, and Gilman 1974; Finn 1995; Jiang and Fisher-Giorlando 2002; Johnson 1966; Shoemaker and Williams 1987; White 1980; Wolfgang 1961; Wright 1989) after statistical control variables are introduced into the models. However, because it has been seen that levels of violence in the larger society are higher among African Americans than whites, the current research predicts that African Americans will commit more acts of violence in prison than their white counterparts.

When looking at prison research several studies yield findings with no significant difference in the rate of misconduct by black and white inmates (Ellis, Grasmick, and Gilman 1974; Finn 1995; Jiang and Fisher-Giorlando 2002; Johnson 1966; Shoemaker and Williams 1987; White 1980; Wolfgang 1961; Wright 1989), while others report higher rates for blacks than for whites (Coe 1961; Flanagan 1983; Goetting and Howsen 1983; Goetting and Howsen 1986; Harer and Steffensmeier 1996; Myers and Levy 1978; Ramirez 1983). After reviewing the research it is argued that this race discrepancy could be the result of one or more processes. First, this discrepancy can be explained in part by a study conducted by Poole and Regoli (1980), which introduced the idea that racial discrimination might be to blame. This research supported the idea that black and white inmates reported equal occurrences of rule breaking; however, blacks were more likely to be written-up. Therefore, they argue that it is not so much that being black leads one to commit more infractions, but that being black leads one to be scrutinized more often and, therefore, observed and reported committing more rule infractions. Second, this discrepancy could be because of the different outcome measures used. Depending on whether the research is looking at misbehavior in general or breaking infraction behavior into types, such as severe infractions versus minor infractions, or violent versus non-violent infractions, may lead to different racial effects. For instance, Hare and Steffensmeier (1996) found that blacks were more likely to commit violent infractions, whereas, whites were more likely to commit drug/alcohol offenses. Cao, Zhao, and Van Dine (1997) found that blacks were more likely to commit severe rule infractions, but found no racial difference for minor rule infractions. Finally, Wright (1989) found that black and white inmates had the same average number of assaults on inmates and staff, but black inmates had a significantly greater number of disruptive infractions, such as fights and arguments. Note that these findings support the idea that a typology of infraction behavior is necessary to better grasp the racial effect on infraction behavior. These racial differences might not be detected if all infractions were grouped together.

At the aggregate-level, the current research examines the percent of inmates in a prison who are African American to better understand the collective effect of imported characteristics of inmates on individual misbehavior. It is plausible that if race has individual effects on prison misbehavior, that race may have collective effects as well (at the aggregate-level). In other words, if individuals do import values and beliefs that affect prison adjustment, as importation theory suggests, then the next logical step is to test the collective effect of these imported characteristics on inmates within a prison. For instance, there are theorists that contend that there is a subculture of violence (Messner 1983; Wolfgang and Ferracuti 1967, 1981). An early subculture of violence thesis offered by Wolfgang and Ferracuti (1967) argued that violence is more common among groups whose subcultural attitudes, norms and values favor aggressive solutions to problems. Such cultural arguments can be logically extended to contend that attitudes, norms and values also exist that favor other forms of misbehavior, such as substance abuse, as ways of acting within prison.

Regarding race, there are subculture of violence theories that assert urban Black America is characterized by high rates of violence because a significant proportion of black males subscribe and adhere to a culture that sanctions violence (Harer and Steffensmeier 1996; Wolfgang and Ferracuti 1981). Importation theory states that individuals import these cultural orientations into prison and this could collectively result in inmates committing more violent infraction types.

In fact, the ethnic and racial composition of prison inmates correlates with prison misconduct. Many have found that racial and ethnic imbalances can be a source of conflict within prisons, often increasing the occurrence of inmate-on-inmate violence (Carroll 1988; Jacobs 1977; McCall 1995). This point is particularly salient when considering prison gangs, as they are often defined in terms of race and ethnicity (Carroll 1988).

Previous research has found a relationship between social class and inmate adjustment (Goetting and Howsen 1986; Toch, Adams, and Grant 1989; Wright 1989; Zamble and Porporino 1988). Under importation theory one can argue that lower-class inmates bring a set of subcultural attitudes, such as those related to the use of violence to prison, leading to lower-class inmates committing more infractions (Irwin and Cressey 1962). It has previously been argued that lower class inmates from urban settings import values which stress toughness and survival, which can increase the number of infractions an inmate commits (Carroll 1982; Johnson 1976).

If values and norms which condone and legitimates violence are imported into prison by members of the poor/lower class, it stands to reason that the percent of poor/lower class in a prison will affect the prison subculture, leading to an increase in infractions (Luckenbill and Doyle 1989). For example, Wolfgang's work on homicide suggests there is a class linked nature of aggression. In fact, Wolfgang (1958) contends that the relationship between class and violence is cultural stating, "Quick resort to physical combat as a measure of daring, courage, or defense of status appears to be a cultural expression, especially for lower socioeconomic class males of both races" (188-189). According to importation theory, such values are imported into prison and will affect infraction behavior at the collective level. As stated previously, the current research contends that it is important to consider context when examining individual-level infraction behavior as there are possible "contextual" imported effects that will impact inmate behavior.

The literature examining the relationship between presenting offense and committing infractions within prison in general shows that inmates whose presenting offense is for a violent crime have higher infraction rates and are more likely to engage in assaults on other inmates (Flanagan 1983). Specifically, some research has found that prior violent criminality was the best predictor of prison offending (DeLisi 2003; Harer and Langan 2001; Leonore 1993). Other research has examined past history of drug misuse and infraction behavior and found that a history of drug use best distinguished rule breakers from those who do not break the rules (Jiang 2005; Main and Gudjonsson 2006). Note that some researchers have found no association between current offense and prisoner misconduct (Coe 1961; Goetting and Howsen 1986; Liqun, Zhao, and Van Dine 1997).

In conclusion, importation theory has received a good deal of support in explaining inmate misbehavior in prison. However, some argue that importation and prisonization theories are still lacking in explanation by not looking at the impact of social controls on infraction behavior (Wooldredge, Griffin, and Pratt 2001). Although importation theory is infrequently used when examining infraction behavior, its potential theoretical contribution must not be ignored.

Social Control Theory

The most well known control theory is Hirschi's (1969) social bond theory. In short, Hirschi explains individual crime/delinquency as a result of weak individual bonds to conventional society. Social bonding theory asserts that the weakening of bonds to conventional order result in individual misbehavior. This occurs because the individual has no stake in conformity (Hirschi 1969). There are four bonds which are predicted to constrain individuals from misbehaving: (1) emotional *attachment* to parents, peers and conventional institutions; (2) *commitment* to long-term educational, occupational, or other conventional goals; (3) *involvement* in conventional activities, such as work and hobbies; and (4) *belief* in the moral validity of the law. Any of these four bonds can independently influence crime/delinquency; however, Hirschi did posit that ties to conventional society by means of any of the four bonding elements made it more likely that an individual would be tied in other ways as well.

According to social bonding theory, misbehavior is most likely when there is an absence of significant relationships with conventional others and institutions, such as being single as an adult or having little to no education. Specifically, the theory suggests that misbehavior would be most likely when an individual is not attached to family and not committed to getting a good education. For example, if an inmate is not married this would be an indication that the family bond is not as strong as it could be and will not control behavior. This also means that if an inmate is married, then marriage would indicate a stronger family bond, and according to social bonding theory, the inmate would be less likely to commit infractions because they would not want to let their significant other(s) down. The bond to family means the inmate cares about his/her family's expectations and is sensitive to their opinions. Committing an infraction in prison would be a violation of society's conventional norms and would go against their family's expectations. Of course, one cannot forget that the inmate already violated society's conventional norms by committing an offense which resulted in his/her incarceration. However, it may be that the bonds have power in prison because inmates recognize that the bonds are their only tie to conventional society and they do not want to sever them completely.

An inmate's commitment to education is also an important bond. In this case it may be that education is an investment in conventional society and committing infractions in prison may be perceived as further jeopardizing that investment, keeping in mind that imprisonment has already jeopardized it somewhat already. In fact, to the extent that there is a rational component to the commitment bond, the cost of committing an infraction cannot be greater than the perceived benefit of not committing an infraction. Depending on the severity of the infraction committed, the cost could be great in terms of time in lock-down, or loss of a prison job. According to rational choice theory interpretations of social control theory, the inmate weighs the pros and cons of committing an infraction and if the investment in education is worth more than the “pro” of getting in a fight or disobeying staff rules, then the inmate will not misbehave. According to a more “identity” based or “socialization” interpretation of social control theory, the offender with more education is more “socialized” and does not participate in infractions because he has internalized the normative constraint against doing so. Note that this interpretation more closely resembles importation theory. Either through rational choice or through socialization, the more educated offender would be expected to refrain from infractions, relative to the less well educated.

Of course, because the proposed research is already dealing with a group of people who have committed a crime severe enough to result in incarceration, it is evident that social bonding is already weakened to an extent. However, the degree of bonding may shed light on whether an inmate is likely to commit a certain type of infraction and whether the infractions someone commits within prison will be diverse or specialized. In general, social control theorists do not believe individuals specialize in the deviant behavior they commit. However, the current research argues that based on social control theory notions that it seems plausible that there may be instances of specialization in certain situations. For example, inmates who are married, have a family, or had a job when arrested, may be constrained from committing serious deviant behaviors in prison. However, already having demonstrated that they are capable of committing deviant acts, they may not be able to escape the temptation of committing further deviant behavior in the form of infractions with less serious consequences. In fact, it seems likely that those less bonded to society would be likely to engage in more diverse behaviors, including serious ones, and those more bonded, if caught misbehaving, would be more likely to specialize in committing less serious types of infractions (hence, less diverse forms of infractions).

Previous research of social bonding theory has generally been supportive, especially research measuring the elements of attachment and commitment in relation to delinquency outside of prison (Cernkovich and Giordano 1987; Costello and Vowell 1999; Hindelang 1973; Hirschi 1969; Jensen 1972; Junger and Marshall 1997; Krohn and Massey 1980; Marcos, Bahr, and Johnson 1986; Rankin and Kern 1994; Sampson and Laub 1993a). Although most empirical tests of social bond theory have been used to explain juvenile delinquency, the current research seeks to explain different types of infraction behavior within prison. This is most similar to more recent research that has begun to apply the notion of social bonds to explain adult criminality (Burton et al. 1998; Horney, Osgood, and Marshall 1995; Lasley 1988; Laub and Sampson 1993). This research has found that adult criminality is inhibited by strong social ties to conventional others and institutions, such as family and work.

Within the prison literature, marital status and education and their relationship to infraction behavior have been examined. Unfortunately, prison researchers seldom employ a social bond perspective to interpret their effects, but instead simply examine their effects as correlates of infraction behavior. The current research uses a social bond theory interpretation, which makes the results more meaningful. When marital status is examined research has found greater involvement in misconduct among unmarried inmates than those who are married (Cao, Zhao, and Van Dine 1997; Finn 1995; Schnur 1949-1950; Myers and Levy 1978; Flanagan 1983; Toch, Adams, and Grant 1989). However, inconsistency appears when looking at the research conducted by Wolfgang (1961) and Goetting and Howsen (1986), who found no association between marital status and misconduct.

Educational achievement is another correlate that has appeared often in the research. When educational achievement is examined it appears that the results are mixed. Many studies have found no association between educational attainment and prisoner misconduct (Zink 1959; Myers and Levy 1978; Goetting and Howsen 1986). Other studies that have found a relationship, but the results are not consistent with one another. Schnur (1949-1950) yielded results of a positive correlation between age at completion of education and prisoner misconduct. However, Toch, Adams, and Grant (1989) found that having a high school degree was related to lower infraction rates. Finn (1995) also found that inmates who had a high school education had lower non-violent infraction rates than inmates without a high school degree.

Researchers generally apply traditional social control theory at the individual level. It is argued here that it can also be applied at the contextual level. Wooldredge, Griffin, and Pratt (2001) claim that informal social controls may operate at the aggregate-level in their examination of prison crowding as an inhibitor of direct control over inmates. One source of support for looking at social control at the aggregate level stems from social disorganization theory, which is based on the idea that informal social control processes operate on an aggregate level, and that variations in these processes can explain rates of crime and delinquency (Shaw and McKay 1942). The current research examines the effect of the percent of a prison population that is relatively highly educated on infraction behavior. Generally, the literature suggests that prisoner academic and vocational education programs help decrease prison rule violations (Gerber and Fritsch 1995; McCorkle, Miethe, and Drass 1995). However, not many researchers have examined pre-prison education at the aggregate level on inmate misconduct. Using social bond theory assertions, it is expected that a higher percent of inmates with more education would decrease misbehavior. If a larger percent of inmates show more commitment to conventional society because of their educational investment, it is hypothesized that the control of education will operate at the aggregate level. In other words, a prison with a higher percentage of more educated inmates would positively affect the prison environment by leading to fewer infractions committed because there are more inmates committed to conventional society, therefore, more inmates with more control over their behavior as a result of their stronger bonds to conventional society. This environment may help prevent an individual inmate from committing an infraction.

Conclusion

Prisonization, importation and social control theories are all used to guide the current research and interpret the findings yielded from the analysis. The goal is to use all three theories together to explain infraction behavior. Specifically, the analysis will examine what theoretical measures predict the different infraction types. Also, the theories shed light on whether inmates will specialize in the infractions they commit or commit a number of different infractions. In short, prisonization theory proposes that inmates will become "prisonized" in prison, taking on the customs and culture of the prison, and commit a range of different infractions as a way to deal with confinement. Yet, it is also implied that there might be specific forms of infractions directed against the staff, as well as violence against other inmates, especially in the more custody-oriented facilities. Importation theory contends that inmates will import characteristics and values from outside of prison that will affect whether they will commit infractions or not. In regard to specialization, if an inmate specializes in criminal behavior outside of prison, then it is believed that they will specialize in the infractions they commit inside prison. Finally, social control theory proposes that inmates more bonded to conventional society will not commit infractions within prison because they have more to lose if they do, like the established bonds to conventional society. In regard to specialization, the current research argues that inmates more bonded to conventional society will be less likely to commit infractions, in general, but if they do, they will commit less serious types of infractions, and those less bonded will commit a range of different infractions (serious and non-serious).

Chapter Three

Data and Methods

Introduction

As discussed in chapter one, the focus of this study is threefold. First, a typology is constructed of infraction behavior within North Carolina prisons; second, the extent of infraction specialization is examined through the use of a Markov model; and third, individual and aggregate level predictors are used to determine if the predictions of infraction behavior vary across type and to help validate the infraction typology. Past research focusing on infraction typology construction or on infraction specialization within prisons has been limited (Barak-Glantz 1983; Craddock 1996; DeLisi 2005; Steinke 1991). However, there is considerable support for criminal behavior specialization outside of prison and these results seem relevant to the expectation that there will be specialization inside prisons as well (Britt 1990; Bursik 1980; Cohen 1986; Deane, Armstrong and Felson 2005; Durham 1988; Kempf 1986; Piquero et al. 1999; Rojek and Erikson 1982; Schwaner 1998; Smith and Smith 1984; Stander 1989; Tunnell 1988). Further, previous research supports the conclusion that context has an effect on inmate behavior (Owen 1998; Poole and Regoli 1983; Thomas and Zingraff 1976; Wooldredge, Griffin, and Pratt 2001); therefore, hierarchical linear modeling logistic regression will be used to identify the different factors affecting types of infraction behavior at both the individual level and the prison level.

The current study employs three research techniques: exploratory factor analysis, Markov modeling, and hierarchical linear modeling logistic regression. Specifically, the exploratory factor analysis plays a central role in typology construction—essentially providing a degree of empirical validation as to what specific infraction violations co-occur with others (across the infraction careers of the inmates). Markov modeling is used to assess the degree of infraction specialization by examining an inmate's infraction career; specifically, looking at back-to-back behavior to see if it is the same. Finally, hierarchical linear modeling logistic regression allows an analysis of the role of different individual-level characteristics, such as race, age, and education and various prison-level variables, such as percent of a prison that is African American, in explaining each type of infraction. Such analysis will further help validate the typology of infraction behavior. If the different types of infractions have different predictors -- and the predictions are congruent with previous research on specialization -- then this would further support the need to differentiate between types of infraction behavior. The remainder of this chapter discusses the data source utilized, explains how the data are structured for each method, explores each of the above methods in more detail and also introduces the measures of individual- and prison-level variables.

Study Population and Sample Design

Data

Before discussing the different methods utilized in the current research in detail, it is appropriate to introduce the data used and discuss how the data were organized to carry out the three different procedures mentioned above: factor analysis, Markov modeling, and hierarchical linear modeling logistic regression.

The data used for this analysis comes from the North Carolina Department of Corrections (NCDOC) inmate computer records from 1997 to 1998. These data are continuously collected by the state of North Carolina for all persons who come into contact with NCDOC. Access to these data to carry out the present research, was given by Dr. William R. Smith. The data were received in SPSS format, contained within multiple files.

By linking offender information using the offender identification number (CIDORNUM), a unique data set was created. CIDORNUM is a unique identification number assigned to all persons who enter the correction system. A person is only ever assigned one number; even if that person enters prison multiple times they will keep the same identification number.

Using these data has allowed analysts to capture demographic and correctional experience type information about offenders under the supervision of the NCDOC to study different research questions. When an inmate first enters the system s/he goes through a diagnostic process which lasts two weeks, wherein such time the NCDOC learns about the inmate through evaluation and interviews. It is during this time that demographic information (i.e., class and education attainment) about the inmate is learned. There is no simple standard form where such information as race, class, age and education is collected. Some things about an inmate, such as an inmate's race and age, are learned from court information compiled by NCDOC during this diagnostic process.

Correctional type information, such as infractions committed within prison is the main focus of the current research. This information is collected officially each time a correctional officer writes-up an inmate for misbehavior. During the time of data collection for the current research there were 54 infractions that an inmate could be reprimanded for ranging in degree of seriousness.[5] Specifically, there are four classes of offenses ranging from most serious (class A) to least serious (class E). A few examples of Class A infractions are seize or hold a hostage, commit an assault on a staff member or commit an assault on another inmate. Such offenses carry the harshest punishments (i.e., more days in disciplinary segregation, more lost privileges). A few examples of Class E infractions are failing to keep

[5] A complete list of infractions can be found in Appendix G

living quarters in a clean and proper condition and failing to observe the standards of personal hygiene. Less serious offenses such as these carry the least severe punishments. Within the current sample the five most common infractions committed are disobeying an order (Class C), using profane language (Class C), substance possession (Class B), unauthorized leave (Class C) and unauthorized location (Class D).

When an inmate first enters the department of corrections they are given a handbook that states the rules and regulations of the prison. These rules and infractions are defined by the Department of Correction policies and procedures. There is a management team within this department that periodically reviews the inmate disciplinary procedures, with input allowed from corrections staff, to decide if an infraction is no longer necessary or if a rule should be added. This type of decision goes through a chain of command where an infraction is eventually taken out of the handbook or added.

Unfortunately, there are definite limitations to using data that are collected officially. The focus of the current research is on infractions committed within prison. However, because this information is collected officially, there is potential bias that could sway the results of the analysis. For instance, correctional officers could single out types of inmates, based on race, class, or age, and more closely scrutinize their behavior or turn a blind eye to problem behavior. Further, correctional officers in one prison might have different ways of dealing with problem behavior --for example, giving verbal warnings instead of writing up misbehavior officially, than correctional officers in another prison. There is most definitely a dark figure to keep in mind: infraction behavior that goes undetected or is overlooked by correctional staff. Such limitations could potentially influence the results of the current research making conclusions of the current research questionable. These limitations notwithstanding, using official data is very common in this area of study and it has been verified that using official data are reliable and valid (Craddock 1996; DeLisi 2003b; Farrington et al. 2003; Hindelang 1978; Hindelang et al. 1979; Kazemian and Farrington 2005; Kirk 2006).[6]

The data used for the present research includes information on all males incarcerated for some point in time within the year 1997. This means that the length of time of incarceration varies from inmate to inmate.[7] For the practical purposes of defining a sample it was decided to select all inmates in prison at the midpoint of the year. The date selected to define the sample is July 1, 1997. Characteristics of the inmates are aggregated to define contextual characteristics in certain parts of the analysis, so it was thought that a July 1st sample would most accurately represent the North Carolina prison population at any given time. Previous research shows that this date is representative of the prison population in the year 1997 (i.e., anyone in prison at any point in 1997). Frazee (2003) analyzed aggregate data at three points in time in 1997 and found no statistically significant differences between descriptive statistics and correlations across these three points in time. She concludes that the characteristics of the prison and the aggregate population are fairly stable. Therefore, July 1, 1997 is a representative picture of the prison population in the year 1997.

Further, the analysis only includes male inmates and prisons housing more than 50 inmates. There are three reasons to justify removing female inmates from the sample. First,

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[6] Self-reported inmate infractions are not without their own measurement problems (Hewitt et al. 1984; Van Voorhis 1994; Wooldredge 1991). The problems of over-reporting by inmates to toughen their image or under-reporting by inmates because they are trying to hide their misbehavior burden self-report data.

[7] For example, an inmate's stay that started in 1990 and continuous throughout 1997 is going to be much longer than that of an inmate who entered prison in 1996 and continuous throughout 1997; however, both inmates would be included in the current sample if they were in prison in July 1st 1997.

they made up less than 9 percent of the North Carolina prison population during the study period. Second, in North Carolina women prisoners are not usually placed in different facilities based on custody classification. This is different from male offenders. Therefore, it would be extremely difficult to examine the impact that custody classification has on infraction specialization, which is an important aspect of this research. Third, previous research has shown that the rates of misbehavior are different for females inmates compared to male inmates (Craddock 1996; Stephan 1989) and it has been argued that they experience prison differently as well (Heffernan 1972; Owen 1998). In regard to only including facilities housing more than 50 inmates, there are two reasons to justify this decision. First, there are 16 facilities only housing an average of 13 inmates during the study period. Housing such a small number of inmates indicates that these institutions are very different from institutions housing more than 50 inmates. Studying such "small" facilities is not an interest of this research. Therefore, 16 facilities were removed from the analysis, leaving 80 male institutions in the analysis. Second, the smaller facilities do not have the same diversity of inmates and contextual level aspects, as do the larger facilities.

The Structure of the Data

As stated above, the data used for the current research is based on all inmates who had a prison stay over July 1, 1997 and captures all infractions committed during the time served of the current sentence during the stay that overlaps with the July 1st date. More specifically, two versions of this data were used in order to carry out the different methods proposed (the methods will be discussed in depth in the next sections of this chapter). One version was used to conduct the factor analysis and make the Markov model and the other version was used to run the hierarchical linear regression logistic regression models. The focus of the first version was on the infraction career of an inmate with more than one infraction.[8] The entire infraction history of these inmates is being used for the factor analysis and Markov modeling. Note that each inmate is only represented once. Inmates with no infraction or only one infraction are excluded from this version of the data. Although both methods use the same people, the unit of analysis is different. The unit of analysis for the factor analysis is the inmate, whereas, the unit of analysis for the Markov model is the transition from one infraction to the next within an inmate's infraction career. This means that for the factor analysis the focus is on all of the infractions committed during an inmate's stay in prison. The goal of this analysis is to see if the infractions group together statistically or co-occur in the careers of inmates. For the Markov model the focus is specifically on the order in which different infractions were committed during an inmate's prison stay. The order in which infractions take place refers to the transitions from committing the first infraction to the second infraction, the second infraction to the third infraction, and so on, until all transitions are captured. In short, a different data file is used for the factor analysis component and the Markov model of the research than is used for the third method used by the current research-- regression analysis.

The second version of the data was used to run the hierarchical linear regression logistic regression models. This data set includes inmates with no infraction and inmates with one or more infractions. Here the unit of analysis is the individual, although it is possible for an individual to be represented in the data set more than once. In fact, an inmate is represented in the data set once for each separate infraction committed. Because the focus

[8] The n of this subsample is 6,197. This means that 6,197 inmates had more than one infraction. The frequency statistics for this sample can be seen in Appendix E. In general, the results resemble the frequency statistics for the entire sample used for the HLM analysis.

is on behavior types and not types of people the data are analyzed where inmates may have more than one observation, depending on how many different types of infractions they have committed. For instance, an inmate will be counted twice if they have committed an "A" infraction and a "B" infraction or if they have committed two "A" infractions. Forty-three percent of the sample has at least one infraction. The total number of observations used is 39,236. The decision to use a dataset where an inmate could be counted more than once was also made because in instances where an inmate has committed more than one infraction, it went against the goal of the current research --which is to predict any infraction-- to arbitrarily select only one of the infractions of that inmate's career to use in the analysis. By deciding to keep all infractions in the analysis, no decision has to be made on how to select one of the infractions for inmates who have two or more infractions committed. Further, because the goal of the current research is to predict any infraction, as opposed to predicting the first infraction, the decision to focus solely on the first infraction of an inmate's career goes against the goals of the research. Therefore, the current research argues that it is preferable to analyze every infraction occurrence within an inmate's career even though admittedly it does violate one assumption of the analysis.[9] In short, this version of the data is different from the version previously discussed, where individual's infraction career constituted the data base, and each inmate was represented only one time.

[9] Although this violates an assumption of regression analysis that the variables be measured "independently", models in which individuals are only represented one time reveal similar results. Specifically, the general patterns seen in the results using the multiple observation file are the similar to the single observation file, which means the same general conclusions can be made. Further, individuals who had multiple infractions average about 2.5 infractions, therefore, on average the multiple infraction individuals are only represented two or three times. Nesting infractions within individuals, where individuals represent a second level of analysis, was not done in part because of the many individuals with no or only one infraction.

General Research Design

Exploratory Factor Analysis

Factor analysis is a statistical technique used to reduce a set of observable variables into a smaller number of latent factors. The primary purpose of factor analysis is to analyze relationships among a number of measurable entities, such as infraction behavior within prisons. The underlying assumption of factor analysis is that there are a number of unobserved latent variables or "factors" that account for the correlations among observed variables (Cattell 1952; Kim and Mueller 1978). Stated for the current context, factor analysis indicates which of the many specific forms of infractions co-occur with other specific forms. These specific forms that tend to co-occur may be deemed a factor or “type” of behavior.

The type of factor analysis employed here is exploratory factor analysis (as opposed to confirmatory factor analysis) using SPSS version 13.0. Recall the data here consists of all of the infractions committed by each inmate. Thus, some specific types of infractions will co-occur within the same infraction histories, providing a basis for correlations needed to conduct the factor analysis. The primary purpose of exploratory factor analysis is to determine the factor structure of a measure and to examine its internal reliability. Exploratory factor analysis is suggested when there is no hypothesis about the nature of the underlying factor structure of their measure. Exploratory factor analysis has three basic decision points: (1) choosing an extraction method; (2) deciding the number of factors to retain; and (3) choosing a rotation method (Costello and Osborne 2005).

The researcher must first decide on the type of extraction method to use: factor analysis or principal component analysis.[10] The primary difference between these methods lies in the way the communalities are used. Principal component analysis assumes the communalities are initially 1, or that the total variance of the variables can be accounted for by means of its components (or factors), and hence that there is no error variance. Factor analysis, conversely, does assume error variance (Field 2000; Rietveld and Van Hout 1993). Principle components analysis is the initial method of extraction employed here. Principal components analysis is the default method of extraction in many popular statistical software packages, including SPSS, and is undoubtedly the most common form of extraction. While there are some who argue against the use of components analysis (Bentler, and Kano 1990; Gorsuch 1990), others contend there is virtually no difference between principal components and factor analysis, or that principal components analysis is preferable to factor analysis (Arrindell & van der Ende 1985; Guadagnoli and Velicer 1988; Rietveld and Van Hout 1993; Schoenmann 1990; Steiger 1990; Velicer and Jackson 1990). Specifically, Field (2000: 434) argues, “the solutions generated from principal component analysis differ little from those derived from factor analysis techniques”.

After extraction, the researcher decides how many factors to retain for rotation. Retaining either too many or too few factors for rotation can have undesirable effects on the results. The majority of researchers use the Kaiser criterion or the Kaiser-Guttman rule to decide how many factors to extract for rotation (Costello and Osborne 2005). This rule simply states that the number of factors that should be retained is equal to the number of

[10] There are more types of extraction methods than these two, but these are the most commonly used (Field 2000).

factors with eigenvalues greater than 1.0. The principal components analysis process produces eigenvalues, which represent the variance accounted for by each underlying factor.

The next decision is rotation method. The rotation of axes is a necessary step for solutions with two or more factors. Prior to rotation, the first axis will lie in between the clusters of variables and in general the variables will not sort well on the factors. The factor loadings of each variable to be more clearly differentiated by factor when rotated (Dunteman 1989; Fabrigar et al., 1999; Gorsuch 1983; Norušis 2005). This dissertation uses promax rotation. Promax is an oblique rotation (as opposed to an orthogonal rotation) and allows for the correlation of factors. The promax rotation tries to fit a target matrix, which has a simple structure, and this necessitates two steps. The first step defines the target matrix, almost always obtained as the result of a varimax rotation whose entries are raised to some power, typically between 2 and 4 (3 was used for the current study) in order to necessitate the structure of the loadings to become bipolar. The second step is obtained by computing a least square fit from the varimax solution to the target matrix. It is argued that an oblique rotation like promax yields better results than the standard orthogonal (varimax) rotation (Dien, Beal, and Berg 2005; Hendrickson and White 1964).

The current study employs exploratory factor analysis to find dimensions of inmate infraction behavior for the purposes of constructing a typology of infraction behavior from a sample of inmates with more than one infraction committed. Finding such dimensions is the first step in the process of studying specialization. One often studies typologies for the purpose of looking at specialization. Many criminologists define specialization as the tendency for offenders to commit successive criminal acts of the same offense type (Britt 1990, 1996; Bursik 1980; Durham 1988; Piquero et al. 1999; Schwaner 1998; Tunnell 1988).

The concept of specialization has two implications that warrant further discussion. The first has to do with change of behavior over time. That discussion takes place in another section. The second implication has to do with the degree of specificity versus generality of the classification. For example, should relatively specific behaviors, such as smoking marijuana be combined with other types of drug use variables to form a more general "substance use" variable, or should smoking marijuana be kept as a separate category? In this regard there are many possible ways to capture specialization in terms of degree of specificity. Most research on specialization defines specialization as referring to "types" of offenses being repeated within an offender's career or offenders engaging in specialized clusters of criminal behavior (Britt 1990, 1996; Bursik 1980; Durham 1988; Piquero et al. 1999; Schwaner 1998; Tunnell 1988). This is different from the narrow view of specialization, which defines specialization as committing one specific illegal act repeatedly, such as smoking marijuana. For example, using this narrow view an offender would only be captured as someone who specializes in criminal behavior if s/he successively smoked marijuana, to the exclusion of other illegal behavior. However, focusing on general categories of types or clusters of similar behavior is different from this narrow view as smoking marijuana would not stand alone. Instead, smoking marijuana would be captured in the larger cluster of drug offenses. When conceptualized this way, specialization occurs if an individual commits any drug offenses disproportionately to other crime types. The current research focuses on the specialization of infraction types, that is to say groups of closely related offenses. Therefore, infraction specialization, in part, will be examined by constructing different types of infractions committed by inmates.

The current research utilizes factor analysis because it is one of the more widely used methods of data reduction and has proven to be an effective way to cluster data (Costello and Osborne 2005; Kim and Mueller 1978). The exploratory aspect of the analysis is especially important to the research due to the limited amount of research in this area.[11] Exploratory factor analysis allowed the current research to test the possibility of reducing 54 infractions into an undetermined set of factors. A lack of consistency in the literature as to the exact grouping of specific offenses also makes exploratory factor analysis useful in the current research. In the literature on criminal behavior outside of prison it is seen that researchers have used different criteria or methods for developing typologies of behavior. For instance, some studies use broad classification types such as violent versus nonviolent offenders (Brennan, Mednick, and John 1989; Durham 1988; Piquero et al. 1999; Schwaner 1998) or monetary crime versus crime against a person (Guerette, Stenius, and McGloin 2005), while others utilize more particular classifications of four to six offense categories (Britt 2000; Bursik 1980; Stander et al. 1989; Williams and Arnold 2002; Wolfgang, Figlio and Sellin 1972). Still others identify up to ten or more specific offense types (Blumstein et al. 1988; Britt 1996; Chaiken and Chaiken 1982; Farrington, Snyder, and Finnegan 1988). Because of the lack of consistency in developing different types of criminal behavior, exploratory factor analysis is the method of choice in the current research to identify empirically derived categories of infractions.

Once identified, the factors derived from the exploratory factor analysis will be assessed for their validity. The thrust of much of the analysis below is to determine if there is variation in the prediction of each of the types of infractions, and whether that variation is

[11] Research on typology construction of infraction behavior within prisons is limited, not typology construction of criminal behavior outside of prison.

consistent with general theoretical explanations and with prior research both inside and outside of prison. This is done by using hierarchical linear modeling logistic regression. The face validity of the factors, however, is also important.

After the factors are formed and types of behavior are grouped together based on sharing high factor loadings on the same factor (i.e., are highly correlated with the underlying factor), the next steps are to 1) examine the extent of specialization of infraction behavior by using Markov models to track change in an inmate's misbehavior to see if successive acts fall into the same cluster of infraction type and 2) to test individual- and aggregate-level predictors on each infraction type to determine if the predictions of infraction behavior vary across type, further validating the typology of infraction behavior.

Once the typology of infraction behavior is empirically generated from the factor analysis the next step is to see if inmates specialize in the infraction types they commit. The current research uses a Markov model to detect infraction specialization by tracking change in an inmate's misbehavior to see if successive acts fall into the same cluster of infraction type.

Markov Models

Markov models are important in the study of infraction specialization by allowing one to examine change in behavior over time. In the present research Markov models are used to examine the extent of infraction specialization by looking at adjacent events in the inmates' infraction careers. Recall, that this analysis was done using a dataset that captures the entire infraction career of inmates and the unit of analysis is the transition from one infraction to another within each career.

It was discussed previously that it is common to define specialization as the tendency for offenders to commit successive criminal acts of the same offense type (Britt 1990, 1996; Bursik 1980; Durham 1988; Piquero et al. 1999; Schwaner 1998; Tunnell 1988). When focusing on change of behavior over time, a researcher can focus on two successive criminal acts or attempt to capture all acts in a criminal career to see if criminal behavior is specialized. Unfortunately, the later requires a complex analysis and is beyond the scope of the research done here. In fact, most research on offense specialization has looked at the tendency of offenders to commit successive criminal acts of the same type (Britt 1990, 1996; Bursik 1980; Durham 1988; Piquero et al. 1999; Schwaner 1998; Tunnell 1988); therefore, the focus of the present research is only on two successive acts in time. This is to say that inmate infractions will be examined in "pairs". For example, an inmate who committed four infractions would have three "pairs" to examine: the first infraction with the second, the second infraction with the third, and the third infraction with the forth. Although there are some limitations to only capturing two successive acts at a time, it is a realistic and doable approach that allows for the continued study of criminal specialization.

Utilizing Markov models allows for the examination of crime-type switching (or change over time) of successive criminal acts of the same type in such a way that meaningful results can be reported. Many researchers have used Markov models to examine change over time of criminal careers and found it to be a useful model (Blumstein et al. 1986; Smith and Smith 1984; Stander et al. 1989; Wolfgang, Figlio and Sellin 1972). Therefore, analysts can be confident in utilizing this established method to study change over time.

Markov models (or transition matrices) are well suited to examine specialization over time, within the limits of examining adjacent events (that is the nth, and n+1 event, where n is the first, second, third, etc. infraction in the offender's career). For the present research transition matrices are used to determine whether infraction-type switching is a Markov process. In a first-order Markov process, the infraction type of the second infraction citation depends, at most, on the infraction type of the immediately preceding infraction citation and is independent of all other prior offense types. In other words, the Markov process is particularly useful for predicting various future attributes of offense switching based on the prior offense type committed. Infraction-type switching is committing one type of infraction, such as committing a "violent" type of infraction, after committing another infraction type or the same type of infraction. If the specialization hypothesis is strongly supported, we would expect the diagonal probabilities of Figure 3.1 to be near one. As discussed earlier, using infraction types is important for the continued development of a typology of infraction behavior because of the clustering of similar types of behavior. Therefore, the focus of the present research is on infraction-type switching.

The Markov process is simply a matrix of probabilities, indicating the chance of moving to any state conditional upon the present state (See Figure 3.1 below for illustration). Using the figure below as a guide, the main diagonal from left to right indicates those who repeat the same crime type. In other words, the diagonal probabilities refer to the likelihood that the next infraction will be the same type as the previous infraction type, illustrating infraction specialization. High values for diagonal probabilities support the argument that careers are specialized. For example, if an inmate's first infraction committed is an infraction of type "A" (infraction n) and the second infraction s/he commits is an "A" infraction (infraction n+1), then there is support for infraction specialization. However, if an inmate's first infraction committed is an "A" infraction (infraction n) and the second

Infraction n + 1

Infraction n

	A	B	C	D	Marginal
A	X				X
B		X			X
C			X		X
D				X	X

Figure 3.1: Markov Model

infraction s/he commits is a "D" infraction (infraction n+1), then infraction specialization is not supported. This kind of movement can also shed light on the escalation or regression of crime-types. For instance, if the first infraction committed is an "A" infraction, which is considered non-violent, and the second infraction committed is a "D" infraction, which is considered violent, then there is support for the escalation hypothesis. A reverse pattern might be deemed "regression" in seriousness.

The final column, labeled "marginal" indicates how many movements within each row have been observed. Because each infraction committed is only dependent on the immediately preceding infraction committed, an inmate can have several movements to report. All movements are captured in the "marginal" column. For example, if an inmate has two movements reported, one being "A" to "B" and the second being (later in his infraction career) "A" to "C", then the marginal column for "A" would report "2" (two transitions). Comparing the marginal to the diagonal column is another way to try and capture the extent of specialization. This is because one can see how often specialization is occurring compared to other types of movement within each row.

The final stage of the analysis is running HLM logistic regression models to determine if the predictors of the different infraction types vary. This process involves testing the “construct validity” of the infraction classification, and is done using hierarchical linear modeling logistic regression. For example, as stated previously, if there are indeed different predictors of the different infraction types and these different predictions are congruous with prior research, it is contended that this would be partial validation for the factors and support the need for a typology of infraction behavior.

Hierarchical Linear Modeling

Researchers interested in inmate behavior have suggested for some time that context plays an important role in affecting inmate behavior (Owen 1998; Poole and Regoli 1983; Thomas and Zingraff 1976; Wooldredge, Griffin, and Pratt 2001). Thus, it is important to include prison-level variables in conventional linear or logistic regression models along with individual variables. This dissertation will use hierarchical linear modeling logistic regression, a form of hierarchical linear modeling (HLM) logistic regression, to predict the type of infraction committed by an inmate.

There are five different infraction types as a result of the factor analysis, introduced in the next chapter, that are the dependent variables in the HLM logistic regression analysis. Within each HLM logistic regression model the dependent variable is equal to 1 if the infraction of interest was committed, and equal to zero if the infraction of interest was not committed. Therefore, five different HLM logistic regression models are run, each focusing on one of the categorical dependent variables. This is done instead of running a multinomial logistic regression, where all the infraction types are run in the same model.

The biggest difference between running a multinomial logistic regression and a series of binomial logistic regressions is the way the reference category of the dependent variable is conceptualized. For the multinomial logistic regression, each infraction type is compared to the reference category of "did not commit (any) infraction". With a series of binomial logistic regressions, each infraction type is compared to the reference category "did not commit the infraction of interest". Given the point of the dissertation, which is to test and validate a typology of different infraction behavior (not to predict the overall occurrence of any infraction), the latter conceptualization makes more sense. The goal is not to predict any infraction behavior versus no infraction behavior. Instead, the goal is to predict a certain infraction type occurring or not occurring. Therefore, in the current research the reference category is made up of all inmates who did not commit the infraction of interest, regardless of whether or not the inmate committed no infraction or simply committed a different type of infraction. For example, let us say there are three infractions --infraction A, infraction B and infraction C. The infraction of interest is infraction A. This means the reference category is made up of inmates who committed no infraction and inmates who have committed a B or C infraction. It simply makes the odds ratio represent the odds of committing a certain infraction over not committing the infraction of interest. The overall goal is to know the odds of the infraction of interest occurring versus the infraction of interest not occurring. It should also be noted that the reference category in the binomial logistic regression models is heavily driven by "true" zeros, or elements that represent "no infraction committed". In the entire sample, 57% of the inmates have "no infraction committed", meaning that the reference category will always be primarily comprised of "true" zeros, regardless of which specific infraction type is being predicted.[12]

In the present analysis, HLM logistic regression is used to estimate the effects of individual-level and aggregate-level variables on each of the infraction types constructed through the factor analysis procedure outlined above (the specific infraction types and their components are introduced and explained in detail in the following chapter). As discussed above, a central part of the present research is to differentiate the infraction types. Therefore, separate models are estimated for each infraction type identified. The focus of the current research is to validate the typology of infraction behavior. This is done by analyzing each infraction type separately.

Hierarchical linear modeling (HLM) logistic regression allows researchers to combine level-1 (individual-level) and level-2 (prison-level) variables in the same regression equation and has proven to be very useful in a wide variety of sociological research applications. With the introduction of statistical software to estimate multilevel models in the mid-1980s, social science researchers have been able to more accurately test conceptual models that have recognized the multilevel structure of society for many years. Hierarchical modeling has become one of the most popular research tools used to test for both individual and contextual level effects at the same time. Technically, the HLM program, by Bryk and Raudenbush, allows researchers to nest smaller units (or level-1 units, such as inmates in the current study) within larger units (level-2 units, such as prisons in the current study) and calculates a slope, intercept, and error term for each of the larger units. In doing this, HLM is

[12] Although the make-up of the dependent variable makes it possible to conduct multinomial logistic regression, the current research argues that at this time such a method is beyond the scope of this research and suggests future research take on this challenge.

able to allow for estimation of effects such that the error terms for the level-1 units are not assumed to be the same for the entire sample, but only for those nested within the same level-2 unit. This allows analysts to control for the variance in one unit while calculating that of the other (Bryk and Raudenbush 2002, 1992).

The present research uses HLM logistic regression to partially validate the infraction typology and study theoretical predictors of the different infraction types constructed. The use of HLM logistic regression is important in this research because of the implicit hierarchy and structure of the data. This method allows for testing the clustering of individuals within higher-level units, such as prisons. In HLM, relationships among variables at a given level are expressed, and further these models specify how variables at one level influence correlations occurring at another level. HLM logistic regression also separates between-group effects from within-group effects. This improves the estimation of effects within individual units as well as allowing for the test of interactions. Level-1 variables may be modified by level-2 effects; therefore, testing for cross-level interaction effects is an important part of the present research (Bryk and Raudenbush 2002, 1992).

The current research uses HLM logistic regression to model cross-level interactions between random level-1 variables and level-2 variables in order to better explain differences in infraction type behavior. It is important to make the distinction between random effects and fixed effects. In multilevel regression models, level-1 intercepts and slopes are typically assumed to vary randomly across groups. Because of the assumptions about their error distributions, their variances are termed "random coefficients." In HLM logistic regression, variances for the intercepts and slopes are estimated by default (meaning that the coefficients are assumed to be random). The researcher, however, has the option of setting the variance to be zero and testing a model in which it is assumed that the intercepts and slopes do not vary randomly across groups. Instead their variance is assumed to be zero, and they are assumed to be constant across groups. This is typically referred to as "fixing the intercepts" or "fixing the slopes". Chi-square (χ^2) tests are calculated in order to determine whether the intercepts and slopes should remain random or whether they should be fixed (Raudenbush and Bryk, 2002; Raudenbush et al., 2004).

For the current research, slopes that do not vary are fixed. Further, cross-level interactions were tested on all level-1 variables that were not fixed. When testing for cross-level interactions, level-2 variables were tested with the random level-1 variables such that level-2 variables from each of the theories were entered simultaneously, and the statistically significant ones kept in the model.[13]

Finally, the issue of centering will be discussed. Centering is a complex issue and should be done with caution. In all models, level-1 variables are grand-mean centered.[14]

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[13] When the HLM models were tested the first time priority was given to aggregate-level variables associated with importation theory (e.g., "percent African American" and "percent lower/working class") over social control theory ("percent with more than high school diploma") over prisonization theory ("percent with prior incarcerations" and the prevalence of infraction measures). Note that these results were similar to the results presented in this dissertation. So, for all level-1 variables not fixed, the level-2 importation variables were the first to be put in the model. The level-2 importation measures were examined first because it was thought that individual's characteristics brought with them into the prison from the community (race and class) were the most important because of the chance of their unique contribution to the current study. While importation at the individual level has been studied extensively, importation is very infrequently examined as a contextual variable. If the chi-square test indicated that the slope of the level-1 variables still had variance to be explained, then the level-2 social control variable was tested to see if it predicted the level-1 variable. Examining social control at the contextual is also done infrequently, making this, again, a unique contribution of the current research. Finally, if there was still variance to be explained the level-2 prisonization variables were tested. Prisonization measures are often examined at the aggregate level and have received substantial support. It was assumed that the level-2 prisonization measures would be able to explain any variance left over after having tested the level-2 importation and level-2 social control variables in the models.

[14] Look to Appendix A to see a table where models were run when level-1 variables are group-mean centered. In general the results of the group-mean centered level-1 variables are similar to the results of the grand-mean centered level-1 variables. It is seen that there are fewer statistically significant level-2 effects for the grand-mean centered models. This is because the grand-mean centered models are more conservative in their estimations due to the fact that it provides a correlation for the differences between prisons. For variables

This means that each individual score is subtracted from the average score of the entire sample. Grand-mean centering the level-1 variables also means the parameter estimates reflect a combination of person-level effects and compositional effects (Kreft and de Leeuw, 1998). The level-2 variables are also grand-mean centered, resulting in the intercept reflecting the average group (Bryk and Raudenbush, 1992; Hofmann and Gavin, 1998; Kreft and de Leeuw, 1998; Snijders and Bosker, 1999). Centering issues for level-2 predictors are essentially the same issues faced in any regression. If the value of "0" for a predictor is not meaningful, the intercept will not have a meaningful interpretation and the estimate may lack precision. When these conditions exist, as they do here, centering is advisable.

Research Questions

The primary research question of this dissertation is this: Is the typology of infraction behaviors valid, at least as evident from its construct validity (an empirical question)? There are two ways that one might proceed to answer this question. One would be to specify a priori how the predictive model for infraction type A will be different for that of infraction type B, and different from that of infraction type C, and so forth, for as many infraction types as are proposed. The primary difficulty with this a priori approach is that there is not a clear body of research on which to make such predictions for the specific categories of infraction behavior that is uncovered here in the factor analysis. Lacking such a specific source of research against which to make such specific hypotheses, a second procedural choice is made. General models will be tested for each of the infraction types described below, and the results interpreted relative to the literature on both infraction and criminal behavior to see if the results are similar to that which others have found and consistent with general

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whose coefficients are quite different between group-mean and grand-mean models, this indicates that there is an uneven distribution across prisons.

theoretical considerations (this will be discussed in detail in chapters 5 and 6). In general, it is expected that by incorporating measures of prisonization theory, importation theory, and control theory infraction occurrence can be better understood. However, to be noted is that because of the lack of detailed research within this area, some aspects will be exploratory in the sense that post hoc interpretations for (or against) the validity of the typology will be presented.

The overriding hypothesis of this research is that there is a degree of specialization in infraction behavior. Support for specialization is seen in part by the construction of a typology of infraction behavior. Recall, that a typology of behavior assumes that there is a degree of specialization. More explicitly, the present research questions who is likely to commit a certain type of infraction and under what conditions different infraction types will be observed. In other words, are there certain people or different types of contexts where different infraction types are more likely to be pronounced? Proponents of importation theory would contend that the type of infraction behavior in which an inmate engages will be affected by individual-level characteristics (e.g., inmate's race and class) that are imported into the prison by the inmates. Importation theory would also contend that prison-level characteristics (e.g., percent of a prison that is African American and percent of the prison that is poor or lower class) will also affect infraction behavior.

Derived from prisonization theory, it is asserted that prison characteristics at the individual level (e.g., custody level) will better predict infractions directed at correctional staff and inmate-on-inmate infractions. Further, it is thought that prison characteristics at the prison level (e.g., percent of inmates with more than one prior incarceration and average time served of all inmates within a prison) will also better predict infractions directed at correctional staff and inmate-on-inmate infractions. Prisonization theory asserts this is because the inmate subculture is one in which inmates exhibit negative attitudes, values and self-concepts that are in opposition to the prison administration and staff. Further, such deprivations also provide the incentive for exploitive and predatory behavior toward inmates as a means of reducing the "pains of imprisonment". Therefore, prisonization should strongly predict infractions directed at correctional staff and inmate-on-inmate infractions. Also, derived from prisonization theory we can expect to see higher rates of each infraction type at the individual level in contexts where there is a greater prevalence of the same infraction type committed at the aggregate level. For example, we would expect to see that there will be a higher rate of type "A" infractions committed by inmates in prisons where there is a greater prevalence of type "A" infractions committed. The specific infraction types identified by the present research will be presented in the next chapter.

Derived from social control theory, it is expected that inmates who are more bonded to conventional others or institutions will be less likely to commit infraction types of a more serious and violent nature. This is because it is assumed that the more serious and violent infraction types have harsher penalties and individuals more bonded to conventional society have more to lose if they commit these types of infractions, such as their bonds to conventional society. Of course, because the proposed research is already dealing with a group of people who have committed a crime severe enough to result in incarceration, it is evident that social bonding is already weakened to an extent. Finally, also derived from social control theory, we would expect that there will be fewer infractions of all types committed in prisons where there is a higher percent of inmates with more than a high school education. This is because it is contended that inmates with more education have more control over their behavior, leading to a context in which there is less normative support for infraction behavior and fewer infractions committed.

Individual-level Variables

The descriptive statistics provided below are calculated from the multiple observation data. Recall from the discussion at the beginning of the chapter that this is the dataset used for the hierarchical linear modeling logistic regression analysis presented in chapters 5 and 6.

Dependent Variables

There are five dependent variables that will be introduced in the next chapter due to the fact that they are empirically derived from the factor analysis. Since the dependent variables are not introduced until then, the descriptive statistics for the infraction types are not presented at this time. Instead, the descriptive statistics for the dependent variables are presented in the beginning of the hierarchical linear modeling logistic regression results in chapter 5. Recall, that one dataset was used to create the infraction typology and another dataset was used to examine predictors of each infraction type. Because of the different datasets the descriptive statistics for the infraction types are best understood in the context of the dataset being used by the HLM logistic regression.

Independent Variables

Independent variables include age, race, individual social class, presenting offense, marital status, education level, custody level, number of prior incarcerations, and time of sentence already served. All of these variables have been found to influence inmate behavior (See chapter 2 for a complete discussion).

Table 3.1: Individual-Level Variables (n=39,236)

Variable	Mean	SD	Min	Max	IQR[15]
Independent t Variables					
Importation					
African American (0=white, 1=AA)	.66	.48	0	1	1
Poor/Lower Class (0=Middle/Upper, 1=Poor/Lower)	.84	.37	0	1	0
Age	31.26	9.01	18	66	13
Presenting Offense Serious/Violent	.48	.50	0	1	1
Presenting Offense Serious/Non-Violent	.11	.31	0	1	0
Presenting Offense Moderate/Non-Violent	.22	.42	0	1	0
Presenting Offense Drugs	.19	.40	0	1	0
Social Control					
Married (0=Not Married, 1=Married)	.15	.35	0	1	0
Education Level (0=0 Thru 8th, 1=Some H.S., 2=Complete H.S., 3= More Than H.S.)	1.32	.80	0	3	1
Prisonization					
Custody Level (0=minimum 3, 1=minimum 2, (2=minimum 1, 3=medium, 4=close)	2.51	1.12	0	4	1
N Prior Incarcerations (Capped at 6)	1.02	1.49	0	6	2
Time Served (Years)	.76	1.00	0	14.22	.67

Age, race, an individual's social class and presenting offense are all considered importation variables. As seen in Table 3.2, age is a continuous variable and the sample has a mean age of 31.26 years. The standard deviation of 9.01 years indicates that age varies

[15] Interquartile ranges of zero are due to the infrequency of some characteristics (i.e., more than 75% of inmates did not specialize in committing a dominant, defiant, evasive, minor, or substance abuse infraction, fall in the poor/lower class, and are not married).

widely. The interquartile range is 13 with the minimum age being 18 and the maximum age being 66. Age was winsorized at 66 because of outliers.[16] Less than half a percent of the population is over the age of 66. The race variable was recoded into a dummy variable, indicating that the inmate was black (coded as “1”) or white (coded as zero). Since white and black inmates make up approximately 98% of the North Carolina prison population, including other race/ethnic categories is not useful and they were excluded from the analysis. As seen in Table 3.2, 66% of the male inmates are black. Individual class refers to an inmate’s socioeconomic status that was created into a dummy variable, indicating poor/lower class (coded as “1”) and middle/upper class the referent category (coded as zero). Eighty-four percent of inmates in this study fall within the poor/lower class category.

An inmate’s presenting offense is measured to capture the importation theory idea that people will do in prison what they do in the community before they went to prison. There are 281 different presenting offenses represented in the sample. In order to make a useful measure out of these offenses, four categories were constructed to match as closely as possible the seriousness degree of the different infraction types of interest (the infraction types will be introduced in the next chapter). Note, however, that a direct match is not possible, because the offenses that one can commit outside of prison which lead to incarceration do not directly match the offenses that an inmate can commit within prison. For instance, there are very minor infractions that can be committed within prisons, such as illegal clothing and fake illness, which has no matching offense outside of prison that would result in incarceration. Specifically, the four categories created are labeled: presenting offense serious/violent, presenting offense serious/non-violent, presenting offense drugs, and

[16] Winsorized means that there were so few inmates over the age of 66 that they were recoded to 66 to prevent undue influences of those “extreme” values.

presenting offense moderate/non-violent (the referent category in the HLM logistic regression models).[17] The presenting offense categories range in seriousness, in regard to harm to others, from most serious (presenting offense serious/violent) to least serious (presenting offense moderate/non-violent). For instance, first degree murder, rape and assault are all offenses captured in the "presenting offense serious/violent" variable. Offenses such as fraud, embezzlement, and forgery are captured in the "presenting offense moderate/non-violent" variable. "Presenting offense moderate/non-violent" was chosen to be the omitted category because such offenses are considered least serious and not extreme compared to the other categories. As seen in Table 3.2, 48% of the sample has a presenting offense serious/violent, 11% has a presenting offense serious/non-violent, 22% has a presenting offense moderate/non-violent and 19% has a presenting offense drugs.

Marital status and education level are both considered social control variables. Marital status was recoded into a dummy variable, indicating married (coded as "1") or not married (coded as zero). Inmates who reported being currently married are coded as married while inmates reporting they were divorced, widowed, separated, single, or unknown are coded as not married. As shown in Table 3.2, 15% of male inmates report being currently married. Education was originally reported as a continuous variable indicating the highest level of schooling completed. This was recoded into a rank order variable with 4 sociologically relevant categories.[18] The four categories created were no high school (representing 0 though 8 years of completed education, coded as "0"), some high school (representing 9 through 11 years of completed education, coded as "1"), completed high

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[17] A table that indicates the specific presenting offenses that make up each category can be found in Appendix H.

[18] Models were run when education was left in its original metric and results were similar.

school (representing 12 years of completed education, coded as "2"), and more than a high school education (representing 13 or more years of completed education, coded as "3") . The mean educational level is 1.32. The modal category is 1 which means most inmates report having some high school education. The standard deviation of .8 indicates substantial variation in the variable.

The three variables considered prisonization variables are custody level, number of prior incarcerations and time of sentence already served. The higher or more restrictive the custody standard, the more "prisonized" the offender is supposed to be, according to the theory. Those with prior incarcerations, as well as those who have served more time on the current incarceration, are more likely to have been exposed to the influences of the inmate subculture. There are five different custody levels: close, medium, minimum 1, minimum 2, and minimum 3. The classification levels are in descending order of perceived public safety risks presented by the inmate. Inmates in close custody are seen as presenting the highest risk while inmates in 3 minimum are assumed to present the least risk. As seen in Table3.2, the mean custody level is 2.51 with a standard deviation of 1.12. The modal category is the medium custody level. The number of prior incarcerations is highly skewed; there are a few cases with high numbers of prior incarcerations, and since it is likely these few cases would constitute "unduly influential cases", the number of prior incarcerations an inmate could have is capped at six. That is, the variable is "winsorized" at six (Fox, 1991:34). Only 3% of inmates had six or more prior incarcerations. The average number of prior incarcerations is 1.02 with a standard deviation of 1.49. In regard to the length of a sentence already served (in years), the average time served is .7627 (278 days). The standard deviation is one year.

Prison-level Variables

The contextual variables used in this analysis are designed to identify characteristics of the prison context and examine the effect that the prison context may be having on infraction specialization. In other words, the present research aims to answer the question, "is there an environment or context where a type of infraction is more or less likely to occur?" It is argued that contextual factors will influence the different types of infractions committed. To answer the question posed, the institutional level variables that are used in the present analysis are percent black, percent poor/lower class, percent with more than a high school education, percent with a prior incarceration, mean of time served, and the prevalence of dominant, defiant, evasive and minor infractions.[19]

To be noted is that all of the variables, except for the prevalence of the different types of infraction measures, are also tested at the individual level.[20] Custody level is not tested at the aggregate level because of multicollinearity with custody level at the individual level. By controlling for the individual-level effects researchers can examine the effect of the context, which is arguably measuring a subcultural effect. It is argued that these prison-level effects yield information about the subculture of a prison, social interactions within prison, or the normative climate of an institution that is affecting behavior. For example, there could be something about a prison subculture comprised of a high proportion of black, poor/lower class inmates with a high percentage of inmates with prior incarcerations that makes it more likely that an inmate will commit a certain type of infraction.

[19] The prevalence of substance abuse infractions is not tested because of multicollinearity.

[20] The married and age variables are not tested at the aggregate level because of multicollinearity.

Table 3.2: Characteristics of North Carolina Prisons (n=80)

Variable	Mean	SD	Min	Max	IQR
Independent Variables					
Importation					
Percent African American	61.51	14.32	14.29	83.13	15
Percent Poor/Lower Class	80.32	5.81	62.35	90.82	7.8
Social Control					
Percent with More Than H.S. Education	8.33	3.44	0	16.33	3.06
Prisonization					
Percent with Prior Incarceration	44.35	9.27	18.57	59.62	8.65
Prevalence of Dominant Infractions	4.77	88.42	-256.4	217.8	122.0
Prevalence of Defiant Infractions	-6.30	97.02	-264.2	237.0	140.0
Prevalence of Evasive Infractions	-2.73	97.11	-343.8	310.7	120.0
Prevalence of Minor Infractions	-3.48	99.54	-349.6	493.6	105.9
Average Time Served (Years)	.62	.24	.11	1.34	.27

As discussed previously, there are 80 North Carolina institutions used in this study. This excludes facilities housing less than 50 inmates, jails, and female facilities. Table 3.3 summarizes descriptive variables for the 80 North Carolina prisons included in this study. All characteristics are reflective of facility conditions on July 1, 1997.

Two importation variables at the aggregate level are being measured: percent African American and percent poor/lower class. Both the percent African American and percent poor/lower class variables are considered importation variables because they are proxies for attitudes that inmates bring with them into the prison (attitudes associated with race and class) and are expected to impact the inmates in prison by helping to create/influence the nature of the inmate subculture (for complete discussion see chapter 2).

The racial make-up of a prison, or more specifically the percentage of a prison population that is African American, could have an effect on the normative climate of a prison. The social cohesion or solidarity formed along racial lines, or lack thereof, could impact the prison culture, causing a type of infraction to occur more often. For instance, Jacobs (1977) examined the solidarity of black inmates and how it served to create problems for prison authorities. Others since Jacobs have also paid particular attention to a racial subcultural effect, above and beyond the individual-level effect (Carroll 1982). As shown in Table 3.2, on average a prison population is 61.51% African American. The standard deviation of 14.32 indicates a considerable amount of variation among prisons.

The second importation variable is the social class composition of a prison, measured by the percentage of a prison population that is poor/lower class. This aggregate-level variable allows the research to capture any subcultural effect that social class has on the different infraction types committed. As seen in Table 3.2, the average prison population is 80.32% poor/lower class. The standard deviation of 5.81 indicates that there is not as much between-prison variation as there was for the percent African American variable -- however, there is enough to warrant examining its effects.

The percent of inmates with more than a high school education in each prison is used as a social control measure. Theoretically, at the individual level it is hypothesized that inmates more bonded to conventional others will be less likely to commit the types of infractions that are violent and serious. One way to measure this bond is to use the amount of education an individual has. The current research focused in on the category “more than a high school education" because the kind of experience and/or training from more advanced education is interesting. Advanced education could possibly imply greater stakes in conformity. Derived from social control theory, more education is one way to be more bonded to a conventional institution, presumably leading to less misbehavior. At the aggregate level, it is assumed that education has an effect on the prison climate or "subculture". It could be the case that an institution with a high percentage of inmates with more than a high school education results in an environment where inmates are more committed to conventional society, have more respect for the prison rules, and the authority of correctional staff so do not commit violent and serious infractions. As shown in Table 3.2, the average prison population is comprised of 8.33% of inmates who have more than a high school education. The standard deviation is 3.44, indicating moderate variation among prisons.

The prison-level variables measuring prisonization theory are percent with a prior incarceration, average time served and the prevalence of dominant, defiant, evasive and minor infractions within a prison compared to other prisons. These variables are indicators of prisonization theory because they are measuring different aspects of the prison environment that may affect inmate behavior. For instance, it is argued that a prison with a higher percent of inmates with a prior incarceration and/or a higher prevalence of dominant infractions committed compared to other prisons may affect whether an inmate is likely to commit a certain type of infraction. As seen in Table 3.2, the average prison population is comprised of 44.35% inmates with at least one prior incarceration. The standard deviation of 9.27 indicates a wide range of variation among prisons. The average amount of time already served by inmates in years is .62 (226 days). The standard deviation is .24 indicating a degree of variation among prisons.

The four infraction prevalence variables were created by first, aggregating the number of occurrences of each infraction type (infraction types will be introduced in the next chapter). Then, a regression was conducted for each infraction type count as a dependent variable, with one independent variable, the total number of infractions of all types. Third, the residual for each infraction type from that equation was standardized. Finally, the values of the standardized residuals were multiplied by 100 to achieve a metric that was more generally comparable to other variables (of course, multiplying by 100 simply moves the decimal point over two places and results in correspondingly lower unstandardized regression coefficients in the subsequent analysis). Computing the standardized residual for each infraction type allows one to capture the prevalence of each type of infraction within an institution compared to all other infractions committed within the same institution.[21]

The average prevalence of the different types of infractions ranges from -6.30 to 4.77 across types (or .063 and .048, respectively, i.e., near zero – since they are averages of standard scores). The average prevalence of dominant infractions within a prison is 4.77 with a standard deviation of 88.42. The mean prevalence of defiant infractions within a prison is -6.30 with a standard deviation of 97.02. Finally, the average prevalence of both

[21] Refer to Appendix B to see results for using the standardized residual method compared to using the simple percent of inmates who have committed a specific infraction type. That appendix demonstrates that the results are generally similar, but overall the results are somewhat stronger using the standardized residual scores, so those are presented and discussed in the main text. Further, it is argued that the standardized residual scores are a better measure for the current research because it not only takes into account the prevalence of each infraction type within a prison compared to all infractions committed within that prisons, but also compared to the prevalence of that infraction compared to other prisons by standardizing the score across prisons. Standard residual scores were created for the Level-2 infraction prevalence variables, but not for any of the other Level-2 variables, because the Level-2 infraction prevalence variables are aggregates of the dependent variables, as opposed to truly "independent" predictor variables.

evasive and minor uncooperative infractions within a prison is about -3 with a standard deviation of 97.11 and 99.54 respectively.

Bivariate Relationships between Independent and Prison-level Variables

The zero-order correlation results for all the variables used in this study are presented in Table 3.3. In general, none of the variables used in this study are strongly correlated to one another. There are, however, many weak to moderate relationships between the different variables. Conventionally, relationships that are considered weak are significantly correlated between .01 and .25, while relationships that are considered moderate are significantly correlated between .26 and .45 (Frankfort-Nachmias and Leon-Guerrero 2002). It should also be noted that no one variable is strongly correlated with any of the five dependent variables.

Individual-Level Variables

When all the individual-level independent variables are put into a correlation matrix the findings reveal that none of them is strongly correlated with any other, but many have weak correlations -- similar to those reported in prior research.[22] The strongest correlation seen at this level is between age and number or prior incarcerations (.28). A positive correlation is to be expected; the older an inmate, the more time to accumulate prior incarcerations. The second strongest relationship is between custody level and "presenting offense drugs" (-.23). This negative correlation indicates that inmates in higher custody levels are less likely to have a presenting offense that is drug related. Two relationships are tied for third strongest, the relationship between marital status and age (.21) and between

[22] Note that there are seemingly high correlations between the presenting offense variables; however, recall that they are mutually exclusive categories of the same variable, so they cannot be usefully interpreted.

Table 3.3: Correlation Coefficients of Independent Variables (n=39,238)

		1	2	3	4	5	6	7	8	9	10	11	12
1	A.A.	1.00											
2	Poor	.08**	1.00										
3	Mar.	-.12**	-.04**	1.00									
4	Edu.	.07**	-.11**	.05**	1.00								
5	Prior	.03**	-.08**	.03**	-.01**	1.00							
6	Cust	.05**	.1**	-.06**	-.13**	.06**	1.00						
7	Tm	-.01	.07**	.02**	-.05**	-.00	.11**	1.00					
8	Age	-.11**	-.06**	.21**	.1**	.28**	-.14**	.14**	1.00				
9	% A.A.	.22**	.06**	-.08**	-.03**	-.03**	.14**	.04**	-.17**	1.00			
10	% poor	.1**	.14**	-.04**	-.07**	-.02**	.37**	.14**	-.08**	.44**	1.00		
11	% Edu.	-.03**	-.03**	.09**	.16**	.1**	-.27**	-.03**	.32**	-.12**	-.21**	1.00	
12	% Prior	-.01**	-.01*	.06**	.07**	.17**	.17**	.06**	.26**	-.07**	-.02**	.46**	1.00
13	Prev Dom	-.02**	.02**	.00	-.04**	.02*	.18**	.15**	.01**	-.09**	.16**	-.16**	.06**
14	Prev Defi	-.00	.04**	-.03**	-.06**	-.06**	.16**	.06**	-.08**	.01**	.27**	-.22**	-.3**
15	Prev Evas	-.03**	.01**	.03**	.04**	.05**	.04**	-.06**	.12**	-.09**	-.03**	.25**	.34**
16	Prev Min.	-.01	-.01	.02**	.04**	.02**	-.09**	.03**	.08**	-.03**	-.13**	.2**	.05**
17	Avg. Tm	.02**	.04**	.02**	-.02**	.01*	.15**	.29**	.06**	.07**	.31**	-.01	.07**
18	PO Vio	.07**	.08**	.00	-.09**	-.14**	.19**	.21**	-.00	..10**	..15**	-.11**	.04**
19	PO N V	-.06**	-.02**	-.02**	-.00	.04**	-.02**	-.07**	-.09**	.04**	-.03**	-.03**	-.03**
20	PO Mod	-.09**	-.02**	-.00	.04**	.16**	.01*	-.06**	.01*	.01**	-.02**	.04**	.08**
21	PO Dru	.04**	-.08**	.02**	.08**	-.02**	-.23**	-.14**	.06**	-.18**	-.15**	.12**	-.11**

		13	14	15	16	17	18	19	20	21
13	Prev Dom	1.00								
14	Prev Defi	.11**	1.00							
15	Prev Evas	-.46**	-.17**	1.00						
16	Prev Min.	.01	.00	.09**	1.00					
17	Avg. Tm	.42**	.11**	-.21**	.13**	1.00				
18	PO Vio	.07**	.04**	-.07**	-.04**	.12**	1.00			
19	PO NV	-.04**	-.04**	.00	-.01	-.04**	-.33**	1.00		
20	PO Mod	-.02**	-.06**	.02**	.01**	-.03**	-.51**	-.18**	1.00	
21	PO Dru	-.04**	.04**	.06**	.04**	-.09**	-.47**	-.17**	-.26**	1.00

*P<.05 **p<.01

Table 3.3: Continued

Key

1.African American	9.Percent African American	17. Average Time Served (Years)
2.Poor/Lower Class	10.Percent Poor/Lower Class	18. Presenting Offense serious/violent
3.Married	11.Percent w/ more than H.S. Educ.	19. Presenting Offense serious/non-violent
4.Education Level	12.Percent with Prior Incarceration	20. Presenting offense moder./non-violent
5.Prior Incarcerations	13. Prevalence of Dominant Infractions	21. Presenting Offense Drugs
6.Custody Level	14. Prevalence of Defiant Infractions	
7. Time Served (Years)	15. Prevalence of Evasive Infractions	
8. Age	16. Prevalence of Minor Infractions	

time served and "presenting offense serious/violent" (.21). Both of these positive correlations are not surprising.

The two other variables used to measure importation at the individual level, African American and poor/lower class, are not highly correlated (.08). The education and married variables used to measure social control are even less correlated (.05). Finally, the three variables used to measure prisonization -- custody level, time already served and number of prior incarcerations -- are also weakly correlated. The strongest relationship is between custody level and number of prior incarcerations (.06). In other words, inmates in higher custody levels have had more prior incarcerations.

Prison-Level Variables

The independent variables at the contextual level are more strongly correlated to one another than they are to the individual-level variables. The strongest relationship is seen between percent of inmates in an institution with a prior incarceration and percent of inmates in an institution with more than a high school education (.46). This indicates that the higher percentage of the inmates in an institution with a prior incarceration, the higher percentage of inmates with more than a high school education. Although this goes against what one might expect to see, it could be a matter of inaccurate reporting on the part of inmates in regard to their level of education. For instance, inmates may be listing some sort of training they have received as years of schooling beyond high school. The second strongest relationship seen is between percent of inmates in an institution that is African American and percent who are poor/lower class. These two variables are designated to measure importation at the aggregate level and are moderately correlated (.44). In regard to the contextual variables used to measure prisonization, there are two relationships that stand out as having high correlations. The first is between the average time served and the prevalence of dominant infractions (.42). This finding shows as would be expected based on prior research on prisonization that time in prison is a determinant of serious infractions. The second relationship is between the prevalence of dominant infractions and the prevalence of evasive infractions (-.46). This finding indicates that dominant infractions are less likely to occur where evasive infractions do.

Individual-Level and Prison-Level Variables

There are not any strong relationships between the individual-level and prison-level variables. The only variables with moderately strong relationships are those for relationships that would be expected because of the similarity of the variables across levels. For instance, the aggregate variable percent African American is significantly related to the individual-level variable African American (.22) and the aggregate variable percent poor/lower class is significantly related to the individual-level variable poor/lower class (.14). Also, the aggregate variables percent with more than a high school education and average time served are significantly related to the individual-level variables education level (.16) and time served (.29), respectively. Note that these correlations are not strong, so they are capturing different attributes. The only other relationships that stand out are between the aggregate variable percent with more than a high school education and the individual-level variable age (.32) and between the aggregate-variable percent poor/lower class and the individual-level variable custody level (.37).

Conclusion

There are three different methods being utilized in the current research: exploratory factor analysis, hierarchical linear modeling logistic regression, and a Markov model. These three methods are used to examine infraction specialization within North Carolina prisons. First, exploratory factor analysis is used to create a typology of infraction behavior. Second, Markov Models are created to examine the extent of infraction specialization in infraction careers. Third, hierarchical linear modeling logistic regression is used to examine what predicts the different infraction types put forth by the factor analysis and to help validate the typology of infraction behavior. Validation will be seen if there are in reality different predictors for the different infraction types, indicating the need to make a distinction between infraction types. The following four chapters discuss the results for each method, starting with the results for the factor analysis, which will introduce the dependent variables for the current research, followed by the Markov model chapter, then two chapters presenting the HLM logistic regression results.

Chapter Four

Factor Analysis Findings

Introduction

This chapter presents the results of the exploratory factor analysis. As discussed in the previous chapter, factor analysis is conducted to help determine the dimensions of inmate infraction behavior. Specifically, the goal is to construct a typology of infraction behavior that can be used to study infraction behavior among the North Carolina prison population. The overriding assertion of this research is that a typology of infraction behavior within prisons is a necessary step in order to both better predict infraction behavior and examine infraction specialization. After constructing a typology of infraction behavior infraction specialization is tested for, and then, theoretical models, such as prisonization, importation and social control, can be tested to reveal how they predict different types of infraction behavior. The results of the factor analysis, the method used to empirically derive the infraction typology, are discussed below.

Factor Analysis

Using SPSS statistical software, exploratory factor analysis was conducted on a sample of inmates with more than one disciplinary infraction recorded by North Carolina correctional institutions. Four meaningful factors are identified as a result of the factor analysis: dominant infractions, defiant infractions, evasive infractions, and minor uncooperative infractions (See Table 4.1 below).

The fifth infraction "type," labeled substance abuse infractions, was created after the factor analysis was done, and is based on the "face validity" of the items and congruence with past research. The "substance" related infractions, substance possession and inhale substance, were originally clustered with the “dominant” infractions factor. However, because there has been support in the literature to single out substance abuse infractions as a stand alone “type” and to single out inmate-on-inmate violence as a stand alone “type,” it seemed appropriate to represent these different types of behaviors as separate factors (Bowker 1980; Fuller and Orsagh 1977; Lockwood 1980; Harer and Steffensmeier 1996; Patrick 1998; Steinke 1991; Thomas and Cage 1977). Therefore, the substance abuse infractions were pulled from the “dominant” infractions type and made into their own category, which is labeled “substance abuse” infractions.

As a result of the factor analysis, the focus of the current research is on five dependent variables, because each infraction type is examined separately. Each infraction type will be closely examined within the chapters to follow. Whether or not an inmate has committed one of the five infraction types or not will be studied. The rest of the dissertation focuses on what type of inmate and in what context each infraction type is committed and whether inmates specialize in committing infractions.

The pattern matrix components of the factor analysis, presenting the factor loadings for each factor, are presented in Table 4.1. Overall, the different infractions cluster together in a meaningful way. For instance, in regard to the level of seriousness and degree of harm to self and others, the infractions grouped along similar lines. There are, however, a few instances when an infraction seems out of place. For example the infractions “escape” and “fight involving weapons” grouped in the minor uncooperative infraction type (a less serious infraction type) and the infractions “unkempt room” and “unclean body” grouped in the defiant infraction type (a serious infraction type). It is important to note that these specific infractions are rare occurrences

Table 4.1: Factor Analysis Results (Pattern Matrix Components)[23]

Factor 1: Dominant	Factor 2: Defiant	Factor 3: Evasive	Factor 4: Minor Uncooperative
Fighting C (.620)	Disobey order (.558)	Unauthorized leave (.784)	Unauthorized funds (.708)
Provoke assault (.726)	Profane language (.656)	Unauthorized location (.756)	Attempt C Infraction (.730)
Fighting B (.718)	Verbal threat (.791)	No threat contraband (.568)	Illegal clothing (.802)
Assault person w/ weapon (.549)	Interfere with staff (.684)	Weapon possession (.511)	Misuse medicine (.728)
Sexual assault (.556)	Property tampering (.508)	Barter/trade/loan money (.693)	Lock tampering (.532)
Taking hostages (.459)	Attempt A infraction (.537)	Negligently perform duties (.431)	Misuse/unauthorized-use phone/mail (.662)
	Assault staff with weapon (.613)	Gambling (.500)	Possession money (.495)
	Refuse to submit drug breath test (.697)	Violate NC law (.536)	Leave quit comm. based program (.547)
	Assault staff with liquids (.540)	Forgery (.633)	Fake illness (.504)
	Self injury (.586)	Legal assistance (.575)	Attempt D Infraction (.498)
	Unkempt room (.469)	Detonating explosives (.524)	Misuse supplies (.496)
	Attempt B infraction (.531)		Escape (.550)
	Non-threat fire (.680)		Attempt E Infraction (.519)
	Threat by fire (.404)		Fight involving weapons (.595)
	Unclean body (.462)		

compared to the other infractions within each type and are not the driving force behind these factors. Therefore, they do not invalidate the factors. The labels given to the factors are designed to capture the nature of the infractions clustered within each factor in regard to both

[23] The fifth infraction "type" is labeled substance abuse infractions. It is not presented in Table 4 because it was not based on the factor analysis . The two infractions that fall within the substance abuse "type" are "substance possession" and "inhale substance."

the level of danger and the severity of the behavior. Each factor will now be discussed, starting with the most dangerous and violent clusters of infractions.

Two factors standout as representing infractions that are the most dangerous, violent and confrontational. These two factors have been labeled “dominant” infractions and “defiant” infractions. The main distinction between these two factors is towards whom the violent infractions are directed (Patrick 1998). With dominant infractions, as defined here, the violence is directed towards other inmates. The label “dominant” was given to infractions involving inmate-on-inmate violence to reflect the power and dominance inmates try to gain over other inmates (Wright 1991). As seen in Table 4.1, dominant infractions include such behavior as assaulting another inmate and fighting between inmates. This type of violence is distinctly different from violence and disobedience aimed at guards and corrections staff. Violence among inmates is an important byproduct of the inmate “pecking order” in a hierarchy.

For defiant infractions, the violence and hostile behavior is directed towards corrections staff. The label “defiant” was given to infractions involving inmate-on-staff confrontations and violence to reflect the fact that the inmates are defying institutional rules by blatantly being aggressive or rebellious towards corrections staff. As seen in Table 4.1, defiant infractions include such behavior as assaulting staff and interfering with corrections staff. Note that there are also infractions clustered within this factor that are not necessarily inmate-on-staff violence (i.e., property tampering and verbal threat). These infractions are, however, still acts that are confrontational and resistant to corrections staff so are still considered to be defiant.

The next cluster of infractions to be discussed is the factor labeled “evasive”. The infractions grouped within this factor are violations that, in general, are not considered dangerous or violent, but instead are seen as non-confrontational, “sneaky” acts. As shown in Table 4.1, this type of infraction includes such acts as barter/trade/loan money and unauthorized leave. Evasive infractions also involve calculating and scheming acts such as forgery and gambling. This factor is labeled “evasive” to reflect the fact that such offenses are committed to evade detection, whereas violence, the primary focus of the previous two factors, is often done confrontationally.

The final two clusters of infractions to be discussed are the least dangerous and serious of all the types in regard to harm to self or others. The first type is labeled “minor uncooperative” infractions. This label was given to infractions that are relatively inconsequential rules violations. As seen in Table 4.1, this factor includes such infractions as unauthorized funds, illegal clothing, and misuse of supplies. In general, these infractions are relatively minor rule violations. Such infractions are seen as minor in part because of degree of harm to self and others, which is relatively minimal, and the overall lack of severity of punishment received for committing such infractions.

The final category of infractions has to do with illegal substances within prison.[24] This infraction type is labeled “substance abuse” to capture the infractions having to do with substance possession. As with minor uncooperative infractions, substance abuse infractions are seen as relatively non-dangerous rule violations. The specific form of illegal substance abuse items are categorized together based on the presumed similarity in the motives to use or exchange/sell drugs.

[24] This “type” of infraction is not presented in Table 4 because it was not statistically founded.

All of the factors discussed above, with the exception of the “substance abuse” infraction type, were “statistically generated” in the sense that factor analysis was used to create these factors -- with the goal of constructing a typology of infraction behavior. Whether these classifications of criminal behavior are “useful” or not, or theoretically meaningful, is yet to be determined. Factor analysis “factors” constitutes evidence at first glance that these forms of behavior should be distinguished in theoretical or practical application. Later on in the dissertation prisonization, importation and control theories will be used to help decide if these forms of behavior have different causes.

Many scholars have argued that criminal typologies are important to criminological research to explore different patterns of criminal offending (Chaiken and Chaiken 1982; Clinard and Quinney 1967; Gibbons 1965, 1968, 1970; Gibbons and Garrity 1962; Glaser 1974; Smith, Smith, and Noma 1986). Unfortunately, many typologies constructed in previous research often lack validation or empirical verification. Further, there is concern that different researchers construct separate types of behavior so there is no unification in typology construction. The present research is exploratory in nature, because little work has been done in constructing an empirically derived typology of infraction behavior. However, with validation and empirical verification, it is hoped that this typology of infraction behavior is useful to future research.

Validity of a Typology

One type of validation is establishing the face validity of a typology by asking whether or not the typology of infraction behavior makes logical and meaningful sense (has “face validity”). Further evidence of face validity will be established by looking at other research to see if similar types of behavior resemble the types presented in the current research. A second type of validation is construct validity, using theoretically derived measures to examine whether or not the infraction types need to be differentiated. Construct validity is an important tool to evaluate the validly of a typology. The typology offered by the present research will be assessed by these two forms of validity.

The typology of infraction behavior presented here does make meaningful and logical sense. Each infraction type is markedly different from the other infraction types in regard to seriousness and harm to self and others. Also, each infraction type is easily labeled, meaning the infractions clustered together in a way that captures similar behavior. The range of the five types of infraction behavior supports the idea that there are distinct categories of infraction behavior that vary in degree of seriousness and danger to self and others. For instance, "dominant" infractions are considered very serious and dangerous inmate-on-inmate conflicts that negatively impact a prison climate due to their confrontational and aggressive nature. Conversely, "minor uncooperative" infractions, by and large, are not considered as serious or dangerous, but are instead seen as less aggressive and confrontational with less physical harm to self and others.

Further validation is accomplished by comparing the similarity of the typology developed here to typologies supported by other researchers. Here the focus is on whether or not the typology of infraction behavior formed by the current research falls in line with previous typological criminal research. The present typology is somewhat new and unique in that the labels are to some extent different from those seen in previous typological research. This typology, however, can be compared to typologies that employ different labels and even to typologies based on criminal behavior outside of prison. In their research, Harer and Steffensmeier (1996) examine two groups of infractions: violent misconduct and alcohol/drug misconduct. The labels are different from those of the current research, however, the violent misconduct type closely matches the dominant infractions type presented here (infractions against inmates). Additionally, their alcohol/drug misconduct type strongly matches the substance abuse infractions type laid out above. Steinke (1991) examines infraction behavior and studies four types of infractions: staff, inmate, self and property. Again, the labels of the different infraction behaviors are different from the labels in the present research; however, there are some commonalities. For instance, the "dominant" infractions type coincides with Steinke's "inmate" type, and the "defiant" infractions type is similar to her "staff" type. In fact, drawing a distinction between infractions aimed against other inmates and infractions aimed against staff is common. Patrick (1998), for example differentiates between inmate-on-inmate and inmate-on-staff altercations, which is similar to the distinction made by the present research between dominant infraction types (infractions against inmates) and defiant infraction types (infractions against staff).

Typological research on criminal behavior outside of prison tends to suffer from one of two noteworthy flaws; either the types are very general (i.e., violent versus non-violent, person versus property) with too many criminal acts that can fall within the type, or the types are very specific (i.e., homicide, drug, and fraud) and are only able to encompass a handful of criminal acts. So again we see that the infraction types offered in the present research do not, in general, necessarily resemble the "types" of criminal behavior laid out in previous work. There are, however, some similarities in regard to clusters of criminal behavior in the degree of seriousness or type of harm done by an act. For instance, Bursik (1980) uses four types of criminal behavior to study specialization: personal injury, personal property, impersonal property and other. The five infraction types offered in the present research do not match Bursik's four types in regard to capturing the same kinds of criminal behavior, but they are similar in differentiating types of behavior based on the kind of harm done by each type. Bursik's personal injury offense type captures acts that are confrontational and directed at another person, such as murder, rape and assault, which is similar to the "dominant" infraction type presented here. Further, Bursik's impersonal property offense type captures acts that are not as confrontational and not directed at another person, such acts as theft and burglary, which is similar to the "evasive" type of infractions presented in the current research.

The other type of typology validation to be considered is construct validity, which considers whether or not the typology offered here is consistent with theoretical predictions about who and under what circumstances particular types of infractions should occur. There is not yet, however, a formal theory of infraction specialization from which to draw these predictions. This is not particularly problematic for the current research because, as explained in Chapter One, it is not only formal, fully developed theories that are relevant to construct validation. Construct validity is not established by simply confirming many predictions in a single study, but instead entails establishing a pattern of consistent findings across different studies, making the objective of the current research to discover some evidence for (or against) the construct validity of the infraction typology that is proposed rather than to establish conclusively a typology of behavior.

Instead of simply examining the correlates of misbehavior, the present research aims to test different measures of prisonization, importation and social control theories to predict different types of infractions committed. As discussed above, this analysis aims to also further validate the infraction typology with post hoc interpretations of findings rather than a priori predictions of specific differences across the models. Hierarchical linear modeling (HLM) logistic regression, undertaken in chapters 6 and 7, is the method used for analysis. If the HLM logistic regression results reveal different predictors for the different infraction types, this will support the notion that these infraction types are indeed different, and the causes of these infraction types are also different.

Conclusion

The validity of the infraction types presented above lends support to the idea that there are different types of behaviors. For instance, the infraction type labeled "dominant infractions" is comprised of serious infractions that indicate an inmate is having problems with other inmates and the infraction type labeled "defiant infractions" is comprised of mostly serious infractions that indicate an inmate is having problems with corrections staff. However, the current research argues that further validation is necessary. An important step is to present the HLM logistic regression results, in chapters 6 and 7, to assess the validity of the typology constructed by showing whether the types are influenced by different predictors in ways that make theoretical sense. It is argued that if there are different predictors of the different types of infractions, then there is support for the idea that there is a need for a typology of infraction behavior. If the same factors are seen predicting the different infraction types, then there would be no need to differentiate between infraction types. Before presenting the HLM logistic regression findings, however, the next step is to examine infraction specialization. Markov Models will be used in chapter 5 to examine the extent of infraction specialization among North Carolina prisoners.

Chapter Five

Change in Infraction Behavior: A Markov Model

Introduction

The purpose of this chapter is to build off of the findings of the previous chapter, the infraction typology generated from the factor analysis, and study changes in infraction behavior over time. Specifically, this analysis is designed to test if inmates specialize in their infraction behavior. Recall that specialization is the tendency to repeat the same offense type successively. In the present analysis specialization will only be examined in the narrow sense of repetition of the same infraction type at two adjacent infraction events (i.e., the inmate's first and second infraction, the second and third, the third and fourth, etc.). With the typology put forth by the current research, specialization will be supported if an inmate commits two dominant, two defiant, two evasive, two substance abuse or two minor uncooperative infractions "back to back" (two events that occur without another infraction event occurring in between the two events) .

Support for the specialization claim has been seen in previous research (Blumstein, Cohen, and Das 1985; Brennan, Mednick, and John 1989; Bursik 1980; Cohen 1986; Craddock 1996; Ekland and Ekland-Olson 1991; Holland and McGarvey 1984; Lattimore, Visher, and Linster 1994; Martinez 1997; Moitra 1981; Rojek and Erikson 1982; Schwaner 2000; Stander et al. 1989; Smith and Smith 1984; Wolfgang, Figlio, and Sellin 1972), but is has also been claimed that offenders do not specialize in the criminal behaviors in which they participate (Gottfredson and Hirschi 1990). The view of specialization put forth by Gottfredson and Hirschi, however, is a rather narrow view. It seems that an offender would only qualify as a specialist if he/she committed the same narrowly defined offense over and over to the exclusion of other offenses. Actual criminal careers (and by implication, inmate infraction careers) are likely to be more complicated than that – yet potentially still qualify as a form of specialization. In the present research, specialization is conceptualized more as a "tendency" or pattern of behavior, rather than the narrow Gottfredson-Hirschi definition. In fact, the attempt here will be quite limited because the focus is on whether someone committing one of the infraction types studied has a tendency to commit that same infraction type – or some other type of infraction -- at his/her next infraction event. Moreover, the specific type of a "non-repeat" infraction that the inmate commits will also be examined to see if there are tendencies for escalation on the seriousness dimension (a relatively less serious infraction is followed by a more serious infraction), or a regression pattern (a relatively serious infraction if followed by a less-serious infraction). No attempt will be made, for example, to categorize an entire infraction career of an inmate, or to study more than the pairs of adjacent infraction events in the inmate's infraction career. Very few studies of infractions have taken up the question of specialization in infraction behavior, and thus the current study is somewhat unique. Most of the specialization research cited above is examining specialization of criminal behavior outside of prison.

The present chapter reports the results from a first-order Markov model used to examine the extent of infraction type specialization within North Carolina prisons. In a first order Markov model, only adjacent infraction events are studied. Also, the "absorbing state" condition (here release from prison) is omitted from the model. Although it is difficult to study change over time, utilizing a Markov model (also referred to as a transition matrix), allows one to examine infraction-type switching or stability. Transition matrices may also be used to analyze changes in offense seriousness in that the infraction categories vary in seriousness (which they arguably do here). Defining infraction type progression or escalation in a Markov process will reveal if an infraction type leads to a more serious infraction type at the next infraction event. Thus, if an infraction is the same as the previous infraction citation, that would indicate a degree of specialization. However, so too would a pattern of “progression” or escalation as well as that of regression, constitute a “pattern”, and thus a form of specialization. Of course, if an inmate commits two infractions of the same type successively, the Markov Model will capture this movement and there will be direct support for infraction specialization in the common meaning of the term. Capturing offense specialization in the narrow sense, as well as in the sense of “progression” or “regression” using Markov models is common in the specialization literature (Bursik 1980; Cohen 1986; Lattimore, Visher, and Linster 1994; Stander et al. 1989; Smith and Smith 1984; Wolfgang, Figlio, and Sellin 1972).

Insights from importation, prisonization, and social control theories lead the current research to believe there will be some form of specialization of infraction behavior within prison. However, in the case of prisonization and social control theories, it could also be argued that considerable diversity in the infraction careers would be expected, given the tenets of the theory (to be discussed below). The logic of importation theory points directly toward their being specialization in the offending behavior inside of prison as the theory implies that certain individuals will import their tendency to specialize in misbehavior inside prison. Because there is empirical support for some degree of specialization outside of prison -- at least importation theorists seem to assume there is -- it is contended that specialization of infractions inside prison should reflect the tendencies outside of prison.

That is, this perspective contends that individual attributes “stay with” the individual as he/she moves from outside to inside the prison.

Recall from earlier discussions that in general it appears that prisonization theory would predict diversity of infraction behavior because of the emphasis on the general nature of deviance that the pains of imprisonment seems to foster. All infractions are in some sense “anti-staff” in that it is the staff who define the rules and their application to the inmates – and infractions violate those rules. However, there are certain instances when prisonization theory implies that there are certain environments or conditions under which certain types of infractions are more likely. Specifically, for example, in a prison where there is a high prevalence of dominant infractions, we would expect that inmates might be more likely to specialize in committing dominant infractions. Similarly, the prevalence of other infraction types should foster those same infraction types at the individual level.

In general, social control theorists do not believe individuals specialize in the deviant behavior they commit. However, the current research argues that based on social control theory ideas that it seems plausible that there may be instances of specialization in certain situations. For instance, inmates more bonded to conventional society might be more likely to specialize in the types of infractions they commit in the sense that they will tend to avoid more serious infractions, and, if they commit any infractions, those will be the less serious types of infractions. On the other side of things, it seems reasonable to expect inmates with weak bonds, who have nothing to lose by deviant behavior, to commit a range of different infractions.

In sum, arguably importation, prisonization and social control theories predict a degree of specialization of infraction behavior (although it could also be argued that prisonization and social control theories imply considerable diversity in behaviors). It is because of these predictions that it is necessary to examine the extent that inmates specialize in committing infractions. Using a Markov Model the current research was able to examine the extent of specialization of infraction behavior.

Results

The transition matrix capturing the different infraction patterns of two successive acts is presented in Table 5.1. (Note that in the model here there is no “absorbing state” such as desistence or release from prison.) The overall results strongly support the notion that infraction behavior is not random, and that subsequent infraction types can be modestly predicted from previous infraction types. Infraction type specialization, however, appears to be somewhat limited. When comparing the diagonal properties in the table, where specialization would be seen, to the probability of an inmate committing a different subsequent infraction (the last column of the table), it is seen that the probability that an inmate will commit a different subsequent infraction is greater for all the infraction types than an inmate committing two of the same acts consecutively. However, this does not mean that infraction specialization is entirely absent.

When comparing the diagonal property to the marginal (second to last column in the table), it is seen that the diagonal values represent the highest probabilities in each column for three out of five infraction types – and they represent the second or first highest probabilities four out of five times (except for evasive where only 13% of the times is an evasive infraction followed by another evasive infraction.) Dominant infractions represent the strongest evidence of specialization, where there is a .245 chance that the next infraction will be of the same type, compared to a .094 chance that any infraction would be a dominant

Table 5.1: Transition Matrix for Five Infraction Types

	Dominant	Defiant	Evasive	Minor	Substance Abuse	# of transitions initiating from infraction type	Average probability of transition initiating from infraction type	Probability of transition to a different subsequent infraction
Dominant	.2445	.1040	.3953	.1435	.1127	683	.0943	.7555
Defiant	.2036	.2724	.2159	.1830	.1250	3737	.5161	.7276
Evasive	.0815	.5571	.1335	.1014	.1264	1558	.2152	.8665
Minor	.1824	.0957	.4073	.2143	.1003	658	.0909	.7857
Substance	.1769	.1140	.3339	.1934	.1818	605	.0836	.8182

infraction. Thus, the probability of repeating a dominant infraction is over two and a half times more likely if the inmate had a dominant infraction as his last infraction than if one did not take the most recent past infraction into consideration. This indication of specialization is an interesting finding considering that dominant infractions are among those of most concern in a prison context.

The infraction type that is next strongest in terms of evidence of specialization is minor uncooperative infractions where there is a .214 chance that the next infraction would be of that same type. This is .124 higher than the marginal value of .091. Thus, repetition of a minor uncooperative infraction is almost twice more likely to happen than is a minor uncooperative infraction in general.

Finally, substance abuse infractions also show some degree of specialization. Here there is a .182 chance of a substance abuse infraction being repeated on successive events, while substance abuse infractions constitute about eight percent of all infractions (approximately a .10 difference). This is modest support for the idea that inmates specialize in substance abuse infractions. Also, it should be noted that a substance abuse infraction is quite likely to be followed by a different infraction type (.818).

Of the remaining two infraction types, defiant infraction and evasive infractions, the case for specialization can be made for the defiant infraction type. The probability of committing two successive defiant infractions is .272, the second highest probability in the defiant column. Compare the .282 probability to .728, which is the probability of committing a different infraction -- either dominant, evasive, minor uncooperative or substance abuse -- after having committed a defiant infraction (again, assuming no absorbing state is included in the model). On the surface, this seems to indicate that inmates do not specialize in committing defiant infractions. At the same time, since approximately 52% of all transitions initiate from a defiant infractions, the odds of any subsequent infraction being somewhat "randomly" distributed across infraction types (i.e., being similar to the "marginal" probability of an infraction of a given type), is not all that unexpected. The results here suggest that their "commonness" makes for a lack of specialization: inmates are about as likely to commit any type of infraction not having committed a defiant infraction as they would if they had committed a defiant infraction. The "general" nature of what are called here defiant infraction types may be an indication that some inmates have problems with corrections staff that are unresolved, resulting in a variety of infraction possibilities at the next infraction event. In other words, if inmate/staff relations are tense at one point in time and result in the inmate committing a defiant infraction, they will continue to be problematic in the immediate future, resulting in that inmate's same propensity for committing an infraction type as would be the case if no defiant infraction type had been committed. This is consistent with the prisonization theory notion that inmates are anti-staff, and anti-staff attitudes may be manifested in a variety of ways.

The evasive infraction type on the surface lends the least or no support to the specialization hypothesis. The probability of committing two successive evasive infractions is .134, compared to .866, which is the probability of committing a different infraction after having committed a defiant infraction. The approximate 13% chance of repeating an evasive infraction is roughly .082 lower than the marginal value of .215. Thus, repetition of an evasive infraction is about 40% less likely to happen than is an evasive infraction in general. It should be noted, however, that evasive infractions by their very nature are likely to go undetected, making this category of infraction somewhat difficult to compare to the other categories. That is, there is likely to be a considerable number of evasive infractions not detected and thus not included in the model.

Another way to examine specialization is to see whether or not there is evidence of "escalation" in infraction careers. That is, over time does an inmate first commit less serious types of infractions and then escalate to committing more serious types of infractions (Blumstein et al. 1986)? In the case of the most clearly serious infraction category, dominant infractions, it would appear that there is slight evidence in support of the escalation hypothesis because two of the probabilities in the first column of Table 5.1, minor uncooperative infractions at .182 and substance abuse infractions at .177, are somewhat larger than their marginal probabilities in the second to last column, which are .090 and .084, respectively. The probabilities found in the first column for defiant infractions (.204) and evasive infractions (.082), however, are quite a bit less than their marginal probabilities of .516 and .215, respectively. So there is some evidence to support the hypothesis that certain relatively less serious offenses are a "springboard" to the most serious infraction category in the case of defiant infractions. Also, an evasive infraction may also lead to a dominant infraction, but indirectly, since an evasive infraction is somewhat more likely to be followed by a defiant infraction, which in turn is more likely to be followed by a dominant infraction.

Another way to look for escalation effects is to see if the least serious infraction category (here minor uncooperative) leads to more serious infractions. As stated above, there is a propensity for those who have committed a minor uncooperative infraction to have dominant as a next infraction type, .184 compared to the .091 marginal probability (in the second to last column) for a dominant infraction in general. There is additional support found in that evasive infractions are more common if the prior infraction is a minor uncooperative, .407, which can be compared to the .215 marginal probability. Finally, there is also some tendency for those who have committed a minor uncooperative infraction to have substance abuse as a next infraction type, .177 compared to the .084 marginal probability.

As for “de-escalation” or regression in terms of the seriousness of the infractions, there is evidence that those who start out with a dominant infraction are quite likely to move on to evasive infractions, .395 compared to a .215 marginal probability. Although speculative, it is tempting to see such a movement between infraction events as a result of the punishments given for the dominant infractions. These punishments may serve as a deterrent to further dominant infractions. However, the overall high probability, .245 of repeating a dominant infraction (second only to the probability of transitioning to an evasive infraction), suggests that deterrence (in the sense of desistence) may not be an explanation for every inmate. Yet, since evasive infractions are generally those that the inmate does to avoid detection, there may be something to the deterrence argument. If there is a deterrent effect here, in essence, the evasive infractions substitute for a repeated dominant infraction.

Since it is not clear how the seriousness of some of the categories should be ranked, it is difficult to make sense, relative to the regression or escalation hypothesis, of the tendency for substance abuse infractions to be followed by evasive infractions (.334, which is .119 more than the marginal probability of an evasive infraction.)

The far right column in Table 5.1 indicates that for every infraction type, it is more likely that a different infraction type follows at the next infraction event than a repeat of the same infraction type. For all infraction types, the results indicate that inmates are more likely to commit two different infraction types back to back then they are to specialize and commit two infractions of the same type. But, as was seen with evasive infractions, the probability of progressing from either a dominant, minor uncooperative or substance abuse infraction to a different infraction type is not evenly distributed. In fact, inmates who first commit either a dominant, minor uncooperative and substance abuse infraction are most likely to go on to commit an evasive infraction, with probabilities of .395, .407 and .334, respectively – compared to the .215 chance that a given infraction would be an evasive one. It is difficult to claim this finding is entirely supportive of the "developmental" theory of specialization because, although moving from minor uncooperative to evasive is consistent with escalating from a less serious to a more serious type of infraction, this cannot be said with the move from substance abuse or dominant to evasive. The move from dominant infractions to evasive infractions shows a clear regression, not an escalation, in the seriousness of the infraction. The move from substance abuse infractions to evasive infractions does not indicate an obvious regression or escalation in seriousness because, although the infraction types are unmistakably different in their nature, these infraction types are not clearly different in their level of seriousness. Perhaps the move to evasive infraction types from other infraction types can be best understood as inmates adapting to the prison environment over time. Committing a dominant infraction -- which are characterized as serious violent confrontations between inmates, including assault with a weapon and sexual assault -- can be interpreted as a sign of an inmate's inability to adjust to the prison environment. The same can be said of substance abuse infractions, which involve illegal substance possession or use. It makes sense that over time, as they become more comfortable and familiar with the prison environment and how it functions, inmates would move away from committing such serious and obvious rule violations for which they are almost certainly going to be caught and reprimanded. Recall that evasive infractions are more "sneaky" in nature, and include violations such as gambling, forgery, and possession of non-threatening contraband. It can be argued that these types of violations are attempts on the part of the inmate to make prison life more feasible. The move from minor uncooperative infractions, which are relatively trivial issues including misusing items such as phones, mail, medicine or supplies, or wearing illegal clothes, also seems reasonable. It makes theoretical sense that, over time, inmates would become more familiar with what is allowed and what is not and therefore not make the same "novice" mistake they made at first. Also there is the possibility that evasive infractions are turned to because of the punishments that were given out for the other infractions at the previous infraction. The inmate may take on more covert misbehaviors rather than suffer further punishment or inconvenience for a dominant, minor uncooperative, or substance abuse offense.

In summary of Table 5.1, one could say that it reveals some support for infraction specialization. When comparing the diagonal properties of the different infraction types to the average probability of committing an infraction (the second to last column in the table), it is seen that there is a degree of specialization. With the exception of defiant and evasive infractions, the diagonal value, showing that an infraction was committed twice in succession, is greater than the average probability of committing the same infraction. Specifically, the probability of committing two consecutive dominant infractions is .245, whereas the probability of any one infraction being dominant is .094, the probability of committing two consecutive minor uncooperative infractions is .214, whereas the probability of any one infraction being minor uncooperative is .091, and the probability of committing two consecutive substance abuse infractions is .182, whereas the probability of any one infraction being substance abuse is .084. These results indicate that committing the same type of infraction successively is more likely than random chance.

Another way to look at the specialization issue is to see in each row where the second largest probabilities are. With the exception of defiant (where the diagonal is the highest value in the row) and substance abuse infractions (where the diagonal is the third highest value in the row), the number in the diagonal (which is the cell showing that two successive infractions of the same type were committed) is the second largest number in the row. The diagonal cell value for dominant is .245, which indicates that the probability of dominant infraction specialization is second only to the probability of moving from dominant to evasive (.395) and is at least .10 higher than the probability of transitioning from dominant to defiant, substance abuse or minor uncooperative. The diagonal cell value for evasive is .134, which indicates that the probability of evasive infraction specialization is second only to the probability of moving from evasive to defiant (.5571) and is higher (although not by much) than the probability of transitioning from evasive to dominant, substance abuse or minor uncooperative. The diagonal cell value for minor uncooperative is .214, which indicates that the probability of minor uncooperative infraction specialization is second only to the probability of moving from minor uncooperative to evasive (.407) and is at least .03 higher than the probability of transitioning from minor uncooperative to dominant, substance abuse or defiant.

Conclusion

The Markov model presented and discussed in this chapter revealed three major themes about inmate infraction behavior. The first major theme revealed in the findings is that there is a modest degree of specialization in prison misconduct. If the specialization hypothesis were strongly supported, we would have expected the diagonal probabilities of Table 5.1 to be near one, and this is not the case with the current research. Of the five categories of infractions presented here, one of the more interesting transitions is the dominant to dominant transition as it involved the repetition of a serious violent offense. This finding lends support to previous research that has found support for violent specialists (Brennan, Mednick, and John 1989; Schwaner 1998).

The current research does not claim strong support for specialization, but instead supports the claim of "limited specialization" in infraction careers. This is similar to Bursik (1980), Rojek and Erikson (1982), Smith and Smith (1984) and Farrington, Snyder, and Finnegan (1988) finding evidence of only limited specialization in offending. The conclusion here is somewhat consistent with the theories discussed. All three theories presented in the current research – prisonization, importation, and social control – arguably predict instances of specialization as well as, in some instances, of versatility.

The second major theme revealed in this analysis is that infraction behavior is not random. This can be seen when looking at the chance of specialization occurring compared to the average probability of a certain type of infraction being committed. Of the four infraction types where specialization did not have the highest probability of occurring, the probability of specialization was still higher than the average probability of that infraction being committed for dominant, minor uncooperative and substance abuse infractions (with the exception being defiant infraction, where the diagonal probability of .272 was the highest in the row, but still lower than the marginal probability of .516). Specifically, if the first infraction is dominant, the probability of the next infraction being either dominant or evasive is .640, if the first infraction is evasive, the probability of the second infraction being either evasive or defiant is .691, if the first infraction is minor uncooperative, the probability of the second infraction being either minor uncooperative or evasive is .622, and, finally, if the first infraction is substance abuse, the probability of the second infraction being either substance abuse or evasive is .516. Without a doubt, infraction behavior is not random and the second infraction type committed is not independent of the first, even in instances where specialization does not appear to be the case. Future research is needed to more fully understand in which particular instances specialization is occurring and in which particular instances versatility is occurring. As it stands now, the results indicate that infraction behavior is not completely random and specialization cannot be ruled out.

The third major theme revealed in this analysis is an unmistakable trend of inmate's moving towards committing evasive infractions from other infraction types. If the first infraction type committed is dominant, minor uncooperative or substance abuse then, the probability of the second infraction type committed being evasive is considerably greater than the probability of either specialization or advancing on to another infraction type. If the first infraction type is either defiant or evasive, the probability of the second infraction being evasive is second only to the probability of it being defiant, and is still noticeably larger than the probability of it being one of the other three infraction types. This pattern was somewhat unanticipated, but, in hindsight, not necessarily shocking. It makes sense that over time, inmates would move away from committing serious and obvious rule violations and inconsequential noncompliance to evasive infractions, which seem to represent the midpoint of seriousness, somewhere between the violence of the dominant and defiant infractions and the triviality of the minor uncooperative infractions. However, the mechanisms involved here are not clear. It may be that inmates move away from infractions for which punishment is more likely to ones where it is less likely: covert acts. Some indirect support is found for this in that inmates who are defiant at the first of any two infraction events (and thus less likely to care about punishment) are no more likely to commit an evasive infraction at the second infraction event than inmates at random. Inmates who commit any infraction type other than defiant are more likely to choose evasive as the second infraction type – perhaps because they are sensitive to the punishments one receives for committing the more overt types of infractions than evasive ones.

The goal of the next two chapters is to examine the role of different factors -- both individual and prison level -- in predicting the occurrence of dominant, defiant, evasive, minor uncooperative and substance abuse infraction types. An assumption of the simple Markov model is that the infraction type of the second infraction citation depends only on the infraction type of the immediately preceding infraction citation. However, because this assumption is limited and has been challenged as not holding (Blumstein et al. 1986; Spilerman 1972), further analysis is necessary to examine what systematically is associated with committing an infraction of a given type. It is hypothesized that different factors (individual and contextual characteristics) will account for the occurrence of the different infraction types and that the results would help to validate the typology of infractions that were derived from the earlier factor analysis. Note that the current research does not model the transition cells of the Markov model, but studies what predicts whether someone commits an infraction by modeling the marginals.

Chapter Six

HLM Findings for Individual-level Predictors

Introduction

This chapter discusses the individual-level (level-1) hierarchical linear modeling (HLM) logistic regression results for the five infraction types derived from the factor analysis. The five infraction types that are the focus of this analysis are: dominant infractions, defiant infractions, evasive infractions, minor uncooperative infractions and substance abuse infractions. Table 6.1 presents the descriptive statistics for the five infraction types. The descriptive statistics for the dependent variables are calculated from the dataset where inmates may be represented more than once, depending on how many infractions they have. For example, if an inmate has two infractions, then that inmate is going to be represented twice in the dataset. Recall from earlier discussion in chapter 3 (the methods chapter) that the HLM logistic regression analysis uses this multiple observation file.[25]

The descriptive statistics show that the most common type of infraction committed is a defiant infraction. Specifically, this type of infraction has been committed 7,789 times in the current study. Forty-seven percent of all infractions committed are defiant infractions. The second most common type of infraction committed is evasive infractions. Twenty-one percent of all infractions committed are evasive infractions. In this case, 3,453 evasive infractions have been committed. Twelve percent of all infractions committed are either

[25] Although this violates an assumption of regression analysis that the variables be measured “independently”, models in which individuals are only represented one time reveal the same general patterns. Nesting infractions within individuals, where individuals represent a second level of analysis, was not done in part because of the many individuals with none or only one infraction.

Table 6.1: Dependent Variable Descriptive Statistics (n=39,236)

Variable	Mean	SD	Min	Max	Frequency
Dependent Variables					
Dominant Infractions	.05	.22	0	1	2,011
Defiant Infractions	.20	.40	0	1	7,789
Evasive Infractions	.09	.28	0	1	3,453
Minor Uncooperative Infractions	.05	.22	0	1	1,945
Substance Abuse Infractions	.04	.19	0	1	1,536

dominant infractions or minor uncooperative infractions. The frequency seen for these infractions types is 2,011 for dominant infractions and 1,945 for minor uncooperative infractions. Finally, nine percent of all infractions committed are substance abuse infractions, which equal 1,536 substance abuse infractions being committed. Note that 57% of the sample has no infraction.

The aim of the analysis in this chapter is to examine the role of different individual-level factors in predicting the occurrence of the five infraction types. Specifically, there are five dependent variables. For each dependent variable one indicates an inmate has committed that infraction type and zero indicates that an inmate has not committed that infraction type. (For example, when examining dominant infractions 1= committed a dominant infraction and 0=not committed a dominant infraction).[26] It is hypothesized, generally, that there are different individual-level factors that bring about the occurrence of the different infraction types. The results are used to help validate the typology of infractions

[26] Using a categorical dependent variable means that the zero category is made-up of inmates who have not committed the infraction type of interest as well as inmates who have committed one of the other infraction types. The current research argues that the zero category is meaningful with the majority of inmates having committed zero infractions. Specifically 57% of the sample has committed zero infractions.

that were derived from the earlier factor analysis. The extent to which the different types of infractions have different predictors (or predictors with regression coefficients of substantially different magnitudes) would help validate the claim that offenders tend to "specialize" in some forms of behavior more than others. Such predictions need be in general congruence with prior research or else the results could be dismissed as being peculiar to the sample or to the methodology of the current study (prior research could include some research on behavior outside of prison). For instance, several studies of racial differences in prison indicate that black inmates are significantly more likely than white inmates to be involved in violent conflicts with both staff and other inmates (Bowker 1980; Fuller and Orsagh 1977; Lockwood 1980). Here, the typology includes violence with a "type" of infraction against staff and a "type" of infraction against other inmates. If it is found that blacks are more likely to be involved in each of these types of infractions, then it can be said that the results are consistent with prior research and partially validated as a result. For example, Harer and Steffensmeier (1996) found that black inmates have significantly higher rates of violent behavior, but lower levels of alcohol and drug misconduct than whites. They interpret their findings as lending support to the importation model of prison adjustment. If such results are generally consistent with what it reported in the current analysis, then again one can say the current analysis is partially validated.

This chapter is laid out in two parts. The first part of this chapter presents the HLM logistic regression results of each infraction type. A model of the individual-level predictors of each infraction type is presented separately. In the second part of the chapter a comparison of the five infraction types is discussed. It is at this time that the partial validity of the infraction typology, based solely on the individual-level predictors, is discussed. Also, throughout this discussion the theoretical interpretations of the results are presented.

In the next chapter models with both level-1 (individual characteristics) and level-2 (prison characteristics) predictors, as wells as, cross-level interaction effects are presented and discussed. After presenting the HLM logistic regression results for the full models (level-1, level-2 and cross-level interaction effects) for each infraction type, partial validation of the typology of infraction behavior will be discussed further.

In the current chapter, each table presenting the HLM logistic regression results for an infraction type displays the unstandardized coefficient, standard error, exponentiated coefficient and the interquartile range effects (IQR) for all predictors. Since the dependent variable is dichotomous, the coefficient reports the change in log odds of the predictors bringing about the outcome, while the exponentiated coefficient simply represents the odds of the occurrence of the event to its non-occurrence, as measured by the dichotomous dependent variable, for each one-unit increase in the independent variable. For simplicity, when a coefficient is discussed in the text of this chapter it will be the exponentiated coefficient.

The IQR effect represents a way to further standardize the independent variables.[27] The IQR effects are the result of first, calculating the IQR by subtracting the 25th percentile from the 75th percentile for each independent variable. Second, the regression coefficient of each variable is multiplied by the IQR and third, the result is exponentiated. The IQR effects allow one to compare the strength of coefficients across variables with different metrics

[27] An exponentiated coefficient represents the proportion increase/decrease in the odds of a dependent variable event and thus represents a form of standardization – yet one gauged to a one unit change in the metric of the independent variable. The IQR effect represents a standardization of an independent variable in that variables are comparable in terms of “low” and “high” values (25th and 75th percentiles).

within each model and is used to examine which measures are the strongest predictors (See Quillian 1995, for further discussion on the use of IQR effects). IQR effects are considered more stable across samples than are standardization techniques that use standard deviations (such as Beta's in OLS regression). Unfortunately, an IQR effect cannot be calculated for dummy variables, but to allow for comparisons, in the column labeled IQR effects, the dummy variable effects are presented for such variables. A dummy variable effect is the change in the dependent variable when the independent variable changes from zero to one. Thus, within the results section IQR effects (the effect on the dependent variable of a change from the average low to average high value on the independent variable) will sometimes be compared to dummy variable effects.

Each model discussed below presents the results of the relationship between one of the five infraction types and the eleven individual-level variables. As discussed in Chapter 3, there are eleven independent variables that are conceptualized within the three different theories, importation, prisonization or social control theories. Specifically, the independent variables are age, race, individual class, marital status, education level, custody level, number of prior incarcerations, time of sentence already served, and the presenting offense variables: presenting offense serious/violent, presenting offense serious/non-violent and presenting offense drugs. Age, race, individual class, and the presenting offense variables are all considered importation variables. Marital status and education level are both social control measures. Finally, the three variables considered prisonization measures are custody level, number of prior incarcerations and time of sentence already served (years).

Dominant Infractions

Individual-level Predictors (Level-1)

The first infraction type discussed is the occurrence of dominant infractions (1=dominant infraction committed, 0=dominant infraction not committed). Although not the most common type of infraction committed, it is among the most serious type of infraction behavior. As mentioned previously, dominant infractions are defined as violent and confrontational -- indicating an inmate is having violent interactions with other inmates.

Table 6.2 presents the results of the HLM logistic regression model predicting dominant infractions. The variance components for the HLM logistic regression model with only level-1 variables included shows that 62% of between prison variation is explained by this model. Because the dependent variable is dichotomous there is no explained variance at level-1. HLM logistic regression provides estimates of the level-2 variance component.[28]

Chi-square tests were run to determine whether the variables included in the model should be estimated as fixed coefficients or random coefficients. Only one level-1 variable, custody level, was found to have varying effects of all those tested. In the following model, the effects of the variable indicating custody level (χ^2= 176.9524, p<.001) were estimated as random coefficients while the effects of all other variables were estimated as fixed coefficients. This indicates that there is significance variation in the slope for the variable custody level across prisons; therefore, cross-level interactions will be tested with this variable, as discussed in the next chapter.

Note that throughout the analysis the magnitudes of the effects are presented in relative terms – that is, in terms of the odds of committing a type of infraction to the odds of

[28] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix. F

Table 6.2: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Dominant Infraction During Current Prison Stay (n=39,236)

Level-1Main Effects

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	.4661***	.0631	1.594	1.594
Poor/Lower Class	.0149	.0532	1.015	1.015
Age	-.0269***	.0044	.9735	.7049
Presenting Off. Serious/Violent	.0224	.0593	1.023	1.023
Presenting Off. Serious/Non-Violent	-.0071	.0650	.9930	.9930
Presenting Off. Drugs	-.2935***	.0721	.7457	.7457
Social Control				
Married	-.0592	.0629	.9426	.9426
Education Level	-.0857***	.0220	.9179	.9179
Prisonization				
Custody Level	.4304***	.0353	1.538	1.538
N Prior Incarcerations	.0123	.0159	1.012	1.025
Time Served (years)	.2150***	.0234	1.240	1.183
Intercept (log odds)	-3.386 (.0338)[29]			

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

not committing that type of infraction. An alternative way to describe effects in logistic regression is to report the actual probabilities. However, here the relative probabilities are reported in terms of odds of the outcome occurring to it not occurring as a result of a one unit change in the independent variable.

Table 6.2 shows three importation indicators are significant predictors of committing a dominant infraction -- an inmate's race (African American), age and presenting offense drugs. Note that the dummy variable effect for the race predictor indicates that it is the

[29] The number in parentheses is the log odds of committing a dominant infraction when all the independent variables are zero (all variables are centered at the mean).

strongest among all level-1 predictors. Being African American increases the odds of committing a dominant infraction by 59%.

Age is negatively related to committing a dominant infraction. Younger inmates are more likely to commit dominant infractions than older inmates. The relationship between race and age and committing a dominant infraction is in the expected direction and similar to what has been found in previous research. Previous research shows that African Americans and younger inmates are more likely to display violent behavior within prison (Bowker 1980; Ekland-Olson, Barrick, and Cohen 1983; Fuller and Orsagh 1977; Harer and Steffensmeier 1996; Lockwood 1980; Porporino and Zamble 1984; Wooden and Parker 1982; Wooldredge 1991).

When looking at the three presenting offense variables, only "presenting offense drugs" is significantly related to committing a dominant infraction. The direction of this relationship is negative. Recall that the comparison group is presenting offense moderate/non-violent. Therefore, inmates whose presenting offense is drug related are less likely to commit a dominant infraction than inmates whose presenting offense is not relatively serious.

Table 6.2 shows that the social control variable education is negatively related to committing a dominant infraction. An increase in education level decreases the odds of committing a dominant infraction by approximately 8%. However, the IQR effects indicate that education is the weakest of the individual predictors that are statistically significant.

The prisonization variables custody level and time served are both positively related to committing a dominant infraction. The IQR effects indicate that custody level is a much stronger predictor of committing a dominant infraction than is time served. In fact, custody level is the second strongest predictor of committing a dominant infraction with race being the strongest. Interpreting the IQR effects, an increase in custody level, from the average low security to the average high security levels, increases the odds of committing a dominant infraction by 54%. In regard to time served, an increase in time served from the average low to the average high, increases the odds of committing a dominant infraction by 18%.

Defiant Infractions

Individual-level Predictors (Level-1)

The second infraction type to be discussed is the occurrence of defiant infractions (1=defiant infraction committed, 0=defiant infraction not committed). As mentioned previously, defiant infractions are the most common type of infraction committed. It is also one of the most serious types of infractions in regard to harm done to others and threat to the prison staff. Defiant infractions are defined as serious, violent, confrontational, and directed at corrections staff.

Table 6.3 shows that nine of the theoretically derived individual-level predictors tested are significantly related to committing a defiant infraction. The variance components for the HLM logistic regression model with only level-1 variables included shows that 65% of between prison variation is explained by this model.[30] Chi-square tests were run to determine whether the variables included in the model should be estimated as fixed coefficients or random coefficients. In the following model, the effects of the variables indicating age (χ^2=153.7018, p<.001), custody level (χ^2=146.4948, p<.001), time served(χ^2=201.7486, p<.001), and presenting offense serious/violent (χ^2=161.9581, p<.001)

[30] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F.

Table 6.3: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Defiant Infraction During Current Prison Stay (n=39,236)

Level-1Main Effects

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	.2411***	.0302	1.273	1.273
Poor/Lower Class	.1517***	.0342	1.164	1.164
Age	-.0423***	.0022	.9586	.5770
Presenting Off. Serious/Violent	-.0453	.0409	.9558	9558
Presenting Off. Serious/Non-Violent	-.0264	.0462	.9739	.9739
Presenting Off. Drugs	-.2903***	.0447	.7480	.7480
Social Control				
Married	-.1338***	.0347	.8748	.8748
Education Level	-.0477***	.0127	.9534	.9534
Prisonization				
Custody Level	.4304***	.0224	1.538	1.538
N Prior Incarcerations	.0473***	.0083	1.048	1.099
Time Served (years)	.2916***	.0233	1.339	1.257
Intercept (log odds)	-1.733 (.1767)[31]			

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

were estimated as random coefficients while the effects of all other variables were estimated as fixed coefficients (their chi square values were not statistically significant). This indicates that there is significant variation in the slope for the variables age, custody level, and time served across prisons; therefore, cross-level interactions will be tested with these variables, as discussed in the next chapter.

The importation measures African American and poor/lower class are both positively related to committing a defiant infraction. Being African American increases the odds of

[31] The number in parentheses is the log odds of committing a defiant infraction when all the independent variables are zero (all variables are centered at the mean).

committing a defiant infraction by 27%. Being poor/lower class increases the odds of committing a defiant infraction by 16%.

The importation measure age has a negative relationship with committing a defiant infraction. The IQR effects indicate that age is a stronger predictor of committing a defiant infraction than race or class and is the second strongest predictor of all the level-1 predictors. An increase in age from the 25th to the 75th percentile decreases the odds of committing a defiant infraction by 58%. The relationship between defiant infractions and race, class and age are consistent with results presented in the literature examining conflicts between inmates and staff (Ekland-Olson, Barrick, and Cohen 1983; Fuller and Orsagh 1977; MacKenzie 1987; Porporino and Zamble 1984).

The importation variable "presenting offense drugs" is negatively related to committing a defiant infraction. This indicates that inmates who have a presenting offense that is less serious in nature (presenting offense moderate/non-violent) are more likely to commit a defiant infraction than an inmate whose presenting offense is drug related.

Table 6.3 also shows that married and educational level, the two social control indicators, are both negatively related to committing a defiant infraction. Married inmates and inmates with more education are less likely to commit a defiant infraction. According to the IQR effects, these two variables are among the weakest predictors of committing a defiant infraction. However, the social control associated with marriage has a stronger effect on committing a defiant infraction than education.

The three level-1 prisonization variables are all positively related to committing a defiant infraction. Custody level has the strongest effect of all the level-1 measures on committing a defiant infraction. Specifically, the IQR effect can be interpreted as follows: as the custody level of an inmate increases from the average low value to the average high value, the odds of committing a defiant infraction increase 54%. The time served variable has the fourth strongest impact of all the level-1 measures on committing a defiant infraction. In this case, the odds of committing a defiant infraction increase approximately 26% as time served increases from the 25th percentile to the 75th percentile. The number of prior incarcerations variable is one of the weakest predictors overall, only increasing the odds of committing a defiant infraction by 10%. The IQR effects indicate that besides age and race, the prisonization variables "custody level" and "time served" are the strongest predictors of committing a defiant infraction.

Evasive Infractions

Individual-level Predictors (Level-1)

The next infraction type to be discussed is evasive infractions (1=evasive infraction committed, 0=evasive infraction not committed). Evasive infractions are the second most common type of infraction committed. Recall that evasive infractions are not defined as dangerous or violent, but instead are devious, non-confrontational acts.

Table 6.4 shows that seven of the theoretically derived individual-level predictors are statistically significant predictors of committing an evasive infraction -- four importation measures and all three prisonization measures are significant predictors. The two social control measures, "married" and education level, are not statistically significant predictors of committing an evasive infraction. The variance components for the HLM logistic regression

Table 6.4: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of an Evasive Infraction During Current Prison Stay (n=39,236)

Level-1Main Effects

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	-.1756***	.0407	.8389	.8389
Poor/Lower Class	.1877***	.0435	1.207	1.207
Age	-.0399***	.0033	.9609	.5953
Presenting Off. Serious/Violent	-.0637	.0458	.9383	.9383
Presenting Off. Serious/Non-Violent	-.0104	.0494	.9897	.9897
Presenting Off. Drugs	-.3398***	.0530	.7119	.7119
Social Control				
Married	-.0033	.0495	.9967	.9967
Education Level	-.0139	.0209	.9862	.9862
Prisonization				
Custody Level	.3689***	.0195	1.446	1.446
N Prior Incarcerations	.0389**	.0130	1.040	1.081
Time Served (years)	.1804***	.0183	1.198	1.152
Intercept (log odds)	-2.722 (.0657)[32]			

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

model with only level-1 variables included shows that 37% of between prison variation is explained by this model.[33]

Chi-square tests were run to determine whether the variables included in the model should be estimated as fixed coefficients or random coefficients. In the following model, the effects of the variable indicating age (χ^2=102.8040, p<.05) and presenting offense serious/violent (χ^2=128.4170, p<.001) were estimated as random coefficients while the

[32] The number in parentheses is the log odds of committing an evasive infraction when all the independent variables are zero (all variables are centered at the mean).

[33] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F.

effects of all other variables were estimated as fixed coefficients. This indicates that there is significant variation in the slope for the variable age across prisons; therefore, cross-level interactions will be tested with these variables, as discussed in the next chapter.

The importation variables African American and age are negatively related to committing an evasive infraction. The exponentiated coefficient indicates that the odds of white inmates committing an evasive infraction are 16% greater than that of African American inmates. As discussed above, there is support in the literature for the idea that African Americans are more aggressive in prison with other inmates and with staff than whites (Bowker 1980; Carroll 1974; Fuller and Orsagh 1977; Harer and Steffensmeier 1996; Lockwood 1980; Wooden and Parker 1982). However, there is not as much agreement on whether whites or African Americans commit more infractions in general (Goetting and Howsen 1986; Petersilia and Honig 1980; White 1980). We know so little in part because previous research has grouped all infractions together and has not broken infractions up into different types of behavior. As seen in the present analysis so far, when infractions are clustered into types, African Americans are more likely to commit the serious, violent and confrontational infractions (dominant and defiant infractions) and whites are more likely to commit non-confrontational infractions (evasive infractions).

The importation variable "poor/lower class" is positively related to committing an evasive infraction. Poor/lower class inmates are 21% more likely than middle/upper class inmates to commit an evasive infraction. This finding is consistent with previous research looking at rule infractions in general, which shows that lower class inmates are more likely to misbehave in prison (Flanagan 1983; Goetting and Howsen 1986; MacKenzie 1987; Petersilia and Honig 1980; Wright 1989).

When looking at age, the IQR effects indicate that age is one of the strongest individual-level predictors of committing an evasive infraction. Younger inmates are more likely to commit an evasive infraction than older inmates.

The importation variable "presenting offense drugs" is also significantly related to committing an evasive infraction. This variable is negatively related to committing an evasive infraction. These results indicate that inmates who have a presenting offense that is moderate/non-violent (the referent category) are more likely to commit an evasive infraction than an inmate whose presenting offense is drug related.

In regard to the prisonization variables, Table 6.4 shows that inmates in higher custody levels, with more prior incarcerations and who have served more time are more likely to commit an evasive infraction. Custody level is the strongest individual-level predictor of committing an evasive infraction. The IQR effects indicate that as the custody level of an inmate increases from the average low value to the average high value, the odds of committing an evasive infraction increase 45%. Prior incarcerations and time served are the weakest individual-level predictors overall. The odds of committing an evasive infraction increase approximately 15% as time served increases from the 25th percentile to the 75th percentile. The number of prior incarcerations variable, the weakest predictor overall, indicates that inmates with prior incarcerations are more likely to commit an evasive infraction.

Minor Uncooperative Infractions

Individual-level Predictors (Level-1)

Minor uncooperative infractions are the next infraction type discussed (1=minor uncooperative infraction committed, 0=minor uncooperative infraction not committed).

Minor uncooperative infractions are one of the least serious types of infraction behavior and include such behaviors as unauthorized funds, illegal clothing, and misuse supplies. This type of infraction is not as common as some of the other types; however, this could be because these infractions are so minor that they are often not detected or written up.

Table 6.5 shows that six of the eleven level-1 theoretically derived predictors are significantly related to committing a minor uncooperative infraction -- four importation measures (poor/lower class, age, presenting offense serious/non-violent and presenting offense drugs) and two prisonization measures (custody level and time served). Neither of the social control measures are statistically significant predictors of committing a minor uncooperative infraction. The variance components for the HLM logistic regression model with only level-1 variables included shows that 59% of the between prison variation is explained by this model.[34]

Chi-square tests were run to determine whether the variables included in the model should be estimated as fixed coefficients or random coefficients. In the following model, the effects of the variables indicating custody level (χ^2=116.8460, p<.01) and time served (χ^2=148.4653, p<.001) were estimated as random coefficients while the effects of all other variables were estimated as fixed coefficients. This indicates that there is significant variation in the slope for the variables custody and time served across prisons; therefore, cross-level interactions will be tested with these variables, as discussed in the next chapter.

Age and poor/lower class are two of the importation measures that are statistically significant predictors of committing a minor uncooperative infraction. According to the IQR effects, age is the third strongest predictor of committing a minor uncooperative infraction.

[34] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F.

Table 6.5: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Minor Uncooperative Infraction During Current Prison Stay (n=39,236)

Level-1Main Effects

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	.0648	.0453	1.067	1.067
Poor/Lower Class	.1371**	.0599	1.147	1.147
Age	-.0304***	.0028	.9701	.6735
Presenting Off. Serious/Violent	-.0206	.0608	.9796	.9796
Presenting Off. Serious/Non-Violent	-.2505***	.0607	.7784	.7784
Presenting Off. Drugs	-.4111***	.0862	.6629	.6629
Social Control				
Married	-.0498	.0580	.9514	.9514
Education Level	.0329	.0259	1.033	1.033
Prisonization				
Custody Level	.3014***	.0315	1.352	1.352
N Prior Incarcerations	.0079	.0135	1.008	1.016
Time Served (years)	.3409***	.0255	1.406	1.306
Intercept (log odds)	-3.120 (.0442)[35]			

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

The IQR effects indicate that as an inmate's age increases from the 25th to 75th percentile, the odds of a minor uncooperative infraction decrease approximately 33%. The poor/lower class variable is the weakest of the significant level-1 predictors of committing a minor uncooperative infraction. The odds of a poor/lower class inmate committing a minor uncooperative infraction are 15% greater than that of middle/upper class inmates. The directions of these relationships are consistent with previous research examining deviant

[35] The number in parentheses is the log odds of committing a minor uncooperative infraction when all the independent variables are zero (all variables are centered at the mean).

behavior within prison (Flanagan 1983; Goetting and Howsen 1986; MacKenzie 1987; Petersilia and Honig 1980; Wright 1989).

Two of the three presenting offense importation variables are significantly related to committing a minor uncooperative infraction: “presenting offense serious/non-violent” and “presenting offense drugs”. Both predictors are negatively related to committing a minor uncooperative infraction. These results indicate that an inmate whose presenting offense is less serious in nature is more likely to commit a minor uncooperative infraction compared to an inmate whose presenting offense is serious/non-violent or drug related.

Table 6.5 shows two prisonization measures significantly related to committing a minor uncooperative infraction: custody level and time served. As we have seen previously for the other infraction types, custody level is the strongest level-1 predictor. Both custody level and time served are positively related to committing a minor uncooperative infraction. Thus, inmates in higher custody levels and who have served more time of their sentence are more likely to commit a minor uncooperative infraction.

Substance Abuse Infractions

Individual-level Predictors (Level-1)

The final infraction type to be discussed is substance abuse (1=substance abuse infraction committed, 0=substance abuse infraction not committed). Table 6.6 shows that six theoretically derived level-1 measures are statistically significant predictors of committing a substance abuse infraction – two importation measures, one social control measure, and three prisonization measures. The variance components for the HLM logistic regression model with only level-1 variables included shows that 29% of the between prison variation is explained by this model.[36]

Chi-square tests were run to determine whether the variables included in the model should be estimated as fixed coefficients or random coefficients. In the following model, the effects of the variables indicating custody level (χ^2=116.9216, p<.01) and time served (χ^2=180.8330, p<.001) were estimated as random coefficients while the effects of all other variables were estimated as fixed coefficients. This indicates that there is significant variation in the slope for the variables custody and time served across prisons; therefore, cross-level interactions will be tested with these variables, as discussed in the next chapter.

African American and age are two importation measures negatively related to committing a substance abuse infraction. These results indicate that white and younger inmates are more likely to commit such an infraction than African Americans and older inmates. As discussed previously, the effect of race on committing any infraction is not clear from previous research; however, there has been support for the finding that whites are more likely than African Americans to commit substance abuse infractions (Harer and Steffensmeier 1996; Thomas and Cage 1977). The IQR effects indicate that the race measure is the second strongest overall predictor -- custody level being the strongest -- of committing a substance abuse infraction.

All three presenting offense measures, “presenting offense serious/violent”, “presenting offense serious/non-violent”, and “presenting offense drugs” are negatively related to committing a substance abuse infraction. These results indicate that inmates whose

[36] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F.

Table 6.6: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Substance Abuse Infraction During Current Prison Stay (n=39,236)

Level-1Main Effects

Variables	Coef.	Se	Exp. (Coef.)	IQR effect
Level-1				
Importation				
African American	-.4075***	.0390	.6653	.6653
Poor/Lower Class	-.0012	.0328	.9988	.9988
Age	-.0255***	.0018	.9749	.7178
Presenting Off. Serious/Violent	-.0969**	.0298	.9084	.9084
Presenting Off. Serious/Non-Violent	-.2356***	.0455	.7901	.7901
Presenting Off. Drugs	-.3256***	.0400	.7221	.7221
Social Control				
Married	-.1520***	.0413	.8590	.8590
Education Level	.0175	.0197	1.018	1.018
Prisonization				
Custody Level	.3630***	.0204	1.438	1.438
N Prior Incarcerations	.0750***	.0091	1.078	1.162
Time Served (years)	.2939***	.0227	1.342	1.259
Intercept (log odds)	-3.156 (.0426)[37]			

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

presenting offense is less serious in nature are more likely to commit a substance abuse infraction compared to inmates whose presenting offense is serious/violent, serious/non-violent or drug related. Surprisingly, offenders who enter prison for drug charges are less likely to have a drug infraction in prison than those inmates in the referent category.

Table 6.6 also shows that the social control measure married is negatively related to committing a substance abuse infraction; however, as seen by the IQR effects it is one of the

[37] The number in parentheses is the log odds of committing a substance abuse infraction when all the independent variables are zero (all variables are centered at the mean).

weakest level-1 predictors. The IQR effects indicate that the odds of a married inmate committing a substance abuse infraction are 14% less than unmarried inmates.

The three prisonization variables, custody level, number of prior incarcerations, and time served, are all positively related to committing a substance abuse infraction. These results indicate that inmates in higher custody levels, who have more prior incarcerations, and who have served more time are more likely to commit a substance abuse infraction than inmates in lower custody levels, who have fewer prior incarcerations and who have served less time of their sentence. Custody level is the strongest level-1 predictor of committing a substance abuse infraction. Number of prior incarcerations and time served fall in the middle of the strongest and weakest predictors in their strength of predicting the occurrence of a substance abuse infraction.

Comparison of Five Infraction Types and Theoretical Interpretation

When examining all five infraction types it is apparent that there are a few measures that are consistently strong predictors of misbehavior, such as custody level, a prisonization measure, and age, an importation measure. However, the analysis also yielded many results that support the argument that there are many differences as well. To make it easier to “see” the differences, Table 6.7 shows the results again from each of the Tables, 6.2 through 6.6. One way to compare the five infraction types is to examine the effects of each of the independent variables on the different infraction types. Beginning with race (African American) at the individual level, one can see that there are rather large differences in the participation of African Americans in the different infraction types. Net of all the other variables in the models, African Americans are much more likely than others to commit dominant infractions, slightly more likely to commit defiant infractions, and substantially

Table 6.7: HLM: Summary of Effects of Importation, Social Control and Prisonization Factors Predicting the Five Infraction Types (n=39,236)

	Dominant	Defiant	Evasive	Minor	Substance
Importation	Exp. Coef.	Exp. Coef.	Exp. Coef.	Exp. Coef.	Exp. Coef.
African American	1.594***	1.273***	.8389***	1.067	.6653***
Poor/Lower Class	1.015	1.164***	1.207***	1.147**	.9988
Age	.9735***	.9586***	.9609***	.9701***	.9749***
Presenting Offense Serious/Violent	1.023	.9558	.9383	.9796	.9084**
Presenting Offense Serious/Non-Violent	.9930	.9739	.9897	.7764***	.7901***
Presenting Offense Drugs	.7457***	.7480***	.7119***	.6629***	.7221***
Social Control					
Married	.9426	.8748***	.9967	.9514	.8590***
Education Level	.9179***	.9534***	.9862	1.033	1.018
Prisonization					
Custody Level	1.538***	1.538***	1.446***	1.352***	1.438***
N Prior Incarcerations	1.012	1.048***	1.040**	1.008	1.078***
Time Served (years)	1.240***	1.339***	1.198***	1.406***	1.342***
Intercept	-3.386	-1.733	-2.722	-3.120	-3.156

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

less likely to commit substance abuse offenses, as well as somewhat less likely to commit evasive infractions than whites.

Theoretically it is argued that the race effects are supportive of importation theory. They indicate that race plays different roles for the different infraction types. As such, these racial differences represent strong support for the idea that the different behaviors have different etiological sources or causes.

For instance, when looking at dominant infraction it can be argued that there are normative differences between African Americans and whites in acceptability of violence in the outside community. According to importation theory, the findings of this analysis suggest that African Americans are importing a propensity to commit acts of violence against other inmates, in agreement with the subculture of violence argument (Irwin, 1985). This conclusion is also reached by Harer and Steffensmeier (1996). Note that the finding of a greater prevalence of violence among African Americans is similar to what has been found outside of prison. For instance, it is seen that outside of prison African Americans are more likely to commit violent offenses (Fox and Zawitz 2003; Maguire and Pastore 2004; Peterson and Krivo 2005; Pettit and Western 2004; Sampson, Morenoff, and Raudenbush 2005) and whites are more likely to do certain types of drugs, such as powder cocaine and ecstasy (Centers for Disease Control 2000; Turner and Lloyd 2003; Yacoubian 2003; Yacoubian and Urbach 2004).

The second level-1 variable, poor/lower class is only positively related to defiant, evasive and minor uncooperative infractions – not dominant or substance abuse infractions.[38] The fact that social class predicts evasive, defiant, and minor uncooperative infractions (in that order in terms of magnitude of effect) within each model, suggests support for some more traditional social class theories in which lower class individuals are more likely to be motivated to steal (be "innovators" in Merton's (1938) schema), an "evasive" offense, and to be defiant towards authority (similar to some of Miller's (1958) "focal concerns" of the lower class, specifically for the lower class to seek "excitement" through defying authority).[39] As for the tendency for lower class inmates to participate in minor uncooperative infractions,

[38] It could be that the absence of a class effect on dominant infractions is due to the rather strong effect of the African American variable in the dominant infraction equation. Essentially, race takes the place of class. However, it is not as clear as to why substance abuse would be unrelated to social class, because in this case there is a negative race effect rather than a positive effect. If substance abuse is a response to strain, specifically the strains of prison life, then the absence of a significant relationship between social class and substance abuse is not surprising. That is, the more immediate strains of prison life take precedence over the more general strains of social class.

[39] Note that prisonization theory also believes inmates have an anti-staff orientation. That theory argues, however, this is not because the attitude is imported, but because inmates become "prisonized" and take on that orientation.

that too is similar to participation in "defiant" infractions in that the behaviors are in opposition to institutional rules and regulations (as opposed to acts directed at other inmates). Thus, the findings regarding social class and infraction types support an importation perspective and seem generally similar to some long standing views on the relationship between social class and specific forms of offending behavior.

As for age effects, they are remarkably similar across the infraction types, lending support for Hirschi and Gottfredsons'(1983) arguments of the universality of the age-crime relationship. In fact, their remarkably consistent effects are in harmony with general expectations about aging. Since there are only rather small differences across infraction types, little will be said about them here.

The final importation measures to be discussed are the presenting offense variables. For each infraction type, an inmate whose presenting offense is drugs are significantly less likely to commit an infraction than an inmate whose presenting offense is moderate/non-violent. For the minor uncooperative infraction type, an inmate with either a drug or a serious/non-violent presenting offense is significantly less likely to commit a minor uncooperative infraction than an inmate whose presenting offense is moderate/non-violent. Finally, for the substance abuse infraction type, an inmate with a presenting offense other than moderate/non-violent is significantly less likely to commit the infraction. Theoretically, importation theory would predict that an inmate's presenting offense is likely to match the infraction committed within prison. The presenting offense results for the current research are difficult to interpret because they do not appear to support this prediction. However, this may be because the presenting offense variables are not measuring the same behavior as the infraction types. For instance, there are many offenses that can be committed outside of prison that cannot be committed within prison and vice versa. So using presenting offense behavior to predict a certain type of infraction behavior may not be the best test of importation theory. Furthermore, these specific results do not appear to support the notion of specialization across contexts (the streets and prison).

The next variables to discuss are measures of social control theory. The results show that the marital status effect is only significantly related to defiant and substance abuse infractions. These results indicate that the social controls of marriage are only significantly reducing defiant and substance abuse infractions. In such cases, social control theorists might contend that married inmates perceive that they have too much to lose to commit such serious infractions against corrections staff (defiant infractions) and/or committing substance abuse infractions which come with severe consequences. Theoretically speaking, it could be that their bonds to conventional others control potential defiant and substance abuse behavior. There is some literature of crime/delinquency that suggests that the bonds of social control theory work differently for different types of behavior that range in seriousness (Agnew 1985; Burkett and White 1974; Friedman and Rosenbaum 1988; Krohn and Massey 1980). The current findings suggest that this is indeed the case for prison infractions as well.

The other social control measure is education level. Education level at the individual level of analysis has negative effects for the two most serious infraction types (dominant and defiant infractions). Again these findings are consistent with the observation that traditional social control measures are differentially influential on different types of behavior. These findings also make theoretical sense, in that social control theory would lead us to expect controls to work better for more serious infractions, because they have more severe punishments that could greatly affect already established bonds to conventional society. The results indicate that social control at the individual level does not inhibit less serious types of behavior. It may be the case that social control barriers only prevent more serious types of deviant behavior, behaviors that have more severe consequences which could more easily sever social bonds -- such as dominant and defiant infractions.

A general theme that has become apparent so far when looking at the individual-level predictors of the different infraction types is the positive relationship between the prisonization variables and committing each of the different types of infractions, with custody level being one of the strongest predictors. Therefore, at this time the proposition discussed in chapter two, that in general prisonization theory would contend that inmates would commit a variety of infraction types -- because inmates exhibit negative attitudes and values that lead to inmates violating prison rules in general -- is supported. Recall that there are a few exceptions to prisonization theory's predictions on diversity, such as; the theory seems to imply that inmates are motivated to commit more of some types of infractions than others. For example, because of the "anti-staff" orientation of the prison subculture, one might expect that there would be more infractions committed against correctional staff. Also, since prisonization theory posits that many of the "pains of imprisonment" are due to the presence of other inmates (who threaten each other at times) then one might expect a prevalence of infractions of inmate-on-inmate violence. However, the findings from the current analysis are not supportive of these ideas that prisonization indicators would better predict infractions committed against correctional staff and inmate-on-inmate infractions (because in general they were equally supportive of all infraction types).

The variable with the strongest effects within each of the models of predicting the different infraction types is the custody level of the individual person. This is not surprising, as many other studies have found, consistent with prisonization theory, that the custody level is an important predictor of the amount of prison misbehavior (Harer and Steffensmeier 1996; Jiang and Fisher-Giorlando 2002; McCorkle, Miethe, and Drass 1995; Steinke 1991; Stephan 1989). Here, we also notice that the effect of custody level seems particularly great for the more serious infractions of dominant violence and defiant infractions. It could be that inmates resort to violence against other inmates and against corrections staff as a way to deal with these severe deprivations in the higher custody prison settings where an inmate is most deprived of social interaction, most deprived of freedom and choice, and most fearful of attack by other inmates. Thus, the findings of higher effects of custody level for dominant and substance abuse infractions would be consistent with those expectations.

Turning now to the next level-1 prisonization measure, number of prior incarcerations, the results show a significant relationship with committing a defiant, evasive and substance abuse infraction. All of the coefficients are positive and of a rather small magnitude. This is somewhat surprising in that some previous research has found prior incarcerations to be an important prisonization measure (Wolfgang 1961; Johnson 1966; Goetting and Howsen 1986). What the results indicate is that substance abuse is found more commonly among those with more prior incarcerations, which would be consistent with a general strain interpretation. Those experiencing the “pains of imprisonment” more often may be prone to use substances illegally as an “escape”. Both defiant and evasive infractions are also more likely to occur among the repeatedly incarcerated. Perhaps the more “experienced” inmates commit evasive infractions, such as bartering/trading and engaging in business activity as a way of getting by in prison or take the more “defeatist” strategy that "one may as well be defiant" as an expression of their "hopelessness" endemic to their repeated prison sentences.

The final prisonization level-1 variable to be discussed is time served. Net of all of the other variables in the model, inmates having served a longer time in prison are more likely to participate in all of the types of prison infraction behaviors studied here. The effects appear to be the weakest for dominant and evasive infractions, but are fairly strong for the other three infraction types. On the surface, this pattern with dominant infractions is hard to explain, as one would expect that "long timers" would be the most "prisonized" and thus might be more likely to participate in the more serious (dominant) infractions than other infraction types. However, some of the mystery may disappear when we consider that custody level is largely determined by sentence length, so the effect of time served may be confounded with custody level, one of the strongest predictors of dominant infractions.

Conclusion

In summary, when focusing only on the individual-level (level-1) predictors the HLM logistic regression findings indicate that a typology of infraction behavior is useful. Further, from a theoretical standpoint all three theories – prisonization, importation, and social control – are necessary in predicting infraction behavior. In regard to the typology of infraction behavior presented in this research, the results show that importation and social control theories are necessary in predicting the different infraction types. Prisonization theory, on the other hand, does predict misbehavior, but the differences seem less pronounced. Prisonization, in general, leads to inmate misbehavior.

It is argued here that the results support the need to differentiate between types of infraction behavior. For instance, without differentiating between types the racial differences in predicting the infraction types would not have been observed. The effect of race on committing infractions has been a popular topic. The question of whether African Americans or whites commit more infractions has been asked often with mixed results. The results presented here show that the answer is contingent on what type of infraction is in question. In fact, refer to Appendix D to see that when the dependent variable is a measure of any infraction type (a dummy variable of infraction versus no infraction committed), there is no race effect. Further, there are some interesting differences between the predictions of the five infraction types when looking at the social control measures. It is seen from the present analysis that the social control measures are predictive of committing the more serious types of infractions (dominant and defiant), but are not predictive of committing the less serious infraction types (evasive and minor uncooperative). These main findings lead the current research to believe that the infraction typology is an important contribution.

In the next chapter prison characteristics (level-2) variables and cross-level interactions are discussed as predictors of each infraction type. Such results will further the discussion on the partial validation of the infraction typology.

Chapter Seven

HLM Findings for Prison-level Predictors

Introduction

This chapter discusses the individual- and prison-level hierarchical linear modeling (HLM) logistic regression results for the five infraction types: dominant infractions, defiant infractions, evasive infractions, minor uncooperative infractions and substance abuse infractions.[40] The goal of the analysis in this chapter is to examine the role of different factors – individual, prison and cross-level interactions -- in predicting the occurrence of the five infraction types. It is hypothesized, generally, that there are different factors that bring about the occurrence of the different infraction types. Recall that it was concluded in the previous chapter that there was partial validation for the typology of infraction behavior when only examining the individual-level predictors. This chapter contends that adding prison-level predictors and cross-level interactions will further help validate the typology of infractions.

A full model, including individual-level predictors, prison-level predictors and cross-level interactions, will be presented for each infraction type. Each full model below presents the results of the relationship between one of the five infraction types and the eleven theoretically derived individual-level variables, nine prison-level variables, and any significant cross-level interactions.[41] However, the focus of this chapter is on the prison-level variables and cross-level interactions for each of the five infraction types since the

[40] The descriptive statistics for the dependent variables are presented at the beginning of chapter six.

[41] Only cross-level interactions were tested, not all possible interactions. The basis for this approach is that there are general theories of human behavior positing that context affects individual level factors, warranting testing for such interactions.

level-1 variables were the focus of the previous chapter. The nine institutional contextual variables that are used in the present analysis are percent black, percent poor/lower class, percent with more than a high school education, percent with a prior incarceration, mean of time served (years), and the relative prevalence of dominant, defiant, evasive and minor infractions. As discussed in chapter three, the variables are seen as measures of importation, prisonization or social control theories. Percent African American and percent poor/lower class are two importation variables being measured at the aggregate level. The percent of inmates with more than a high school education in each prison is used as a social control measure. Finally, the contextual level variables measuring prisonization theory are percent with a prior incarceration, average time served (years) and the relative prevalence of dominant, defiant, evasive and minor infractions within an institution compared to the prevalence these infractions committed in all the other institutions.

Because there has been much interest in using HLM logistic regression to examine "cross-level" interaction effects – presumably because of the general theoretical orientation that the context may impact the effect that individual-level variables have on the dependent variables -- focus will be given here to cross-level interaction effects. To help interpret the cross-level interaction effects, it is useful to distinguish between synergistic, compensatory and buffering effects between the two variables involved in an interaction effect (Cohen et al. 2003:285). Cohen et al. distinguish between the first-order effects (the effects of each variable that is captured by the coefficient associated with the variable) and second-order effects (the effect measured by the coefficient associated with the product term of the two variables). Assuming centered variables, one can say that first-order effects are those associated with a variable when the other variable is average (zero). Second-order effects represent the amount that the first order effect must be altered to capture the effect when the interacting variable has a value of one (one unit above the average). The combination of first- and second-order effects constitutes the interaction effect. When the first-order effects of the two variables involved in an interaction are in the same direction as the effect of the product term (that is, all negative or all positive signs), then the result is called “synergistic” --implying that the two variables when combined result in a greater probability of the outcome than the additive effect of each variable. Cohen et al. state “the whole is greater than the sum of the parts” (2003:285). For example, intelligence and a good education may combine to produce better intellectual performance in a “synergistic” way. One could say that intelligence enhances the effect of education, or that education enhances the effect of intelligence on a dependent variable such as occupational attainment.

A second type of interaction effect is a “compensatory” effect, where the first-order effects are of the same direction or sign (both are positive or both are negative) but the interaction effect is of the opposite sign. For example, having a mother who values education and a child getting good grades in grade school may be positively associated with choosing a college track in high school, but these two variables may have a negative interaction effect because either getting good grades or having a mother valuing education may be sufficient to lead to being on a college track in high school. One could say that having a mother valuing education can “compensate” for not getting good grades or that getting good grades can “compensate” for not having a mother valuing education – toward the common end of choosing a college track in high school.

A third type of interaction effect is a buffering one. Here the first-order effects have opposite signs (one is positive and one is negative), and the interaction term is in harmony with one or the other of the first-order effects. For example, getting good grades (a dependent variable) may be negatively associated with the number of hours spent watching television and positively associated with the number of hours spent studying. A negative second order effect would imply that the beneficial effect that the number of hours spent studying has can be reduced or "buffered" by the number of hours spent watching television. These three terms synergistic, compensatory, and buffering will be used to describe the cross-level interaction effects found in the analysis below.

Each of the tables below, presenting the HLM logistic regression results for each infraction type, display the unstandardized coefficient, standard error, exponentiated coefficient and the interquartile range effects (IQR) for all predictors. Since the dependent variable is dichotomous, the coefficient reports the change in log odds of the predictors bringing about the outcome, while the exponentiated coefficient simply represents the odds of the occurrence of the event to its non-occurrence, as measured by the dichotomous dependent variable, for each one-unit increase in the independent variable. For simplicity, when a coefficient is discussed in the text of this chapter it will be the exponentiated coefficient. As discussed in Chapter Six the IQR effect represents a way to further standardize the independent variables.[42] The IQR effects allow one to compare the strength of coefficients across variables with different metrics within each model and is used to examine which measures are the strongest predictors (See Quillian 1995, for further discussion on the use of IQR effects). IQR effects are considered more stable across samples

[42] An exponentiated coefficient represents the proportion increase/decrease in the odds of a dependent variable event and thus represents a form of standardization – yet one gauged to a one unit change in the metric of the independent variable. The IQR effect represents a standardization of an independent variable in that variables are comparable in terms of "low" and "high" values (25th and 75th percentiles).

than are standardization techniques that use standard deviations (such as Beta's in OLS regression).

The layout of this chapter is similar to the previous chapter where the first part of the chapter presents the HLM logistic regression results for each infraction type, discussing the prison-level effects and cross-level interactions and the second part of the chapter compares the predictors of each infraction type and brings in the theoretical interpretation of the results.

Dominant Infractions

Prison-level Predictors (Level-2)

The first infraction type discussed is the occurrence of dominant infractions (1=dominant infraction committed, 0=dominant infraction not committed). Dominant infractions are defined as violent and confrontational -- indicating an inmate is having violent interactions with other inmates. Table 7.1 presents the individual-level and prison-level predictors as well as the cross-level interaction effects of committing a dominant infraction. Of the nine prison-level variables tested, six are significantly related to committing a dominant infraction – the social control measure and five of the six prisonization measures are statistically related to committing a dominant infraction. Neither of the importation measures is statistically related to committing a dominant infraction. The variance components for the full HLM logistic regression model (including level-1, level-2 and cross-level interactions) show that 84% of the between prison variation is explained by this model.[43]

[43] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F. The variance components for the HLM model with only level-1 and level-2 variables (without cross-level interactions) are presented in Appendix F as well.

Table 7.1: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Dominant Infraction During Current Prison Stay (n=39,236)

Level-1 and Level-2 Main Effects and Cross-Level Interactions

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	.4898***	.0669	1.632	1.632
Poor/Lower Class	.0037	.0592	1.004	1.004
Age	-.0290***	.0050	.9714	.6859
Presenting Offense Serious/Violent	.0017	.0595	1.001	1.001
Presenting Offense Serious/Non-Violent	.0008	.0668	1.001	1.001
Presenting Offense Drugs	-.3000***	.0873	.7409	.7409
Social Control				
Married	-.0630	.0698	.9390	.9390
Education Level	-.0810***	.0241	.9222	.9222
Prisonization				
Custody Level	.6046***	.0433	1.830	1.830
Percent Poor/Lower Class	.0242***	.0053	1.025	1.208
Percent W/ More Than H.S.	.0523***	.0095	1.054	1.174
Average Time Served (years)	-.7226***	.1544	.4855	.8220
N Prior Incarcerations	.0146	.0170	1.015	1.030
Time Served (years)	.2146***	.0216	1.239	1.183
Level-2				
Importation				
Percent African American	.0070	.0064	1.007	1.111
Percent Poor/Lower Class	.0162	.0137	1.016	1.135
Social Control				
Percent W/ More Than H.S.	-.1324***	.0226	.8760	.6665
Prisonization				
Percent W/ Prior Incarceration	.0200**	.0072	1.020	1.189
Average Time Served (years)	.5426**	.2112	1.720	1.159
Prevalence of Dominant Infractions	.0025***	.0007	1.002	1.356
Prevalence of Defiant Infractions	.0018**	.0006	1.002	1.286
Prevalence of Evasive Infractions	.0009	.0005	1.001	1.114
Prevalence of Minor Infractions	-.0009*	.0004	.9991	.9091
Intercept (log odds)	-3.753 (.0234)			

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

The social control variable education at the aggregate level (percent of inmates with more than a high school education) is negatively related to committing a dominant infraction.

The IQR effects indicate that this variable is the second strongest level-2 predictor (the prevalence of dominant infraction being the strongest) and the fourth strongest predictor overall of committing a dominant infraction. The IQR effect can be interpreted as the education level of a prison increases from the 25^{th} percentile to the 75^{th} percentile, the odds of committing a dominant infraction decrease by 33%.

Table 7.1 shows that six out of nine prison-level variables measuring concepts derived from prisonization theory are statistically significant predictors of committing a dominant infraction: the percent of inmates with a prior incarceration, average time served (years), prevalence of dominant infractions, prevalence of defiant infractions and prevalence of minor uncooperative infractions committed within a prison compared to all other prisons. All five predictors are positively related to committing a dominant infraction. These results indicate that inmates housed in prisons where there is a higher percent of inmates with a prior incarceration, a higher average of time served, a higher prevalence of dominant, defiant and minor uncooperative infractions committed are more likely to commit a dominant infraction. The prevalence of dominant infractions variable is the strongest among the aggregate level prisonization measures. However, when the IQR of all the variables in the model are taken into account, the prevalence of dominant infractions variable is only the third strongest predictor. Thus, several other factors are more important as predictors of dominant infractions than the prevalence of them.

Cross-Level Interactions (Level-1 by Level-2)

Table 7.1 presents the significant cross-level interactions predicting the occurrence of a dominant infraction. As discussed in the previous chapter, in regard to the random effects of the level-1 predictors, custody level was the only level-1 variable in this model tested for cross-level interactions. Table 7.1 shows that custody level interacts with percent poor/lower class, percent with more than a high school education, and average time served (years). In general, these effects are relatively small, compared to several of the effects observed for other variables.

The IQR effects indicate that custody level is the strongest predictor of committing a dominant infraction when the level-2 variables are zero (that is, the level-2 variables are at "average," as the variables are grand mean centered, so the mean score is zero). However, the custody-level effect (an individual-level effect) on committing a dominant infraction is affected, or conditional on, the characteristics of the prison-level variables. For instance, there is a negative interaction effect between custody level and average time served (years). Because the main-effects are both in the same direction we can speak of a compensatory effect. This means that inmates in higher custody levels are more likely to commit a dominant infraction but this effect is weakened in prisons with a higher average of time served (years). Note that the main effects -- or what Cohen et al. (2003:285) call the "first order" effects -- of the variables are quite large (.54 and .60 for average time served and custody level, respectively). However, the negative interaction effect is even larger (-.72). Thus, when average time served in a prison is one year above average (recall that data are centered at the mean) and the custody level is average, the number of dominant infractions expected in the model is increased by .54 above the constant, which is .0234, representing the log odds of a dominant infraction when all of the individual-level variables are zero.

In contrast to the compensatory effects just discussed custody level has a synergistic effect with percent of poor/lower class inmates. Thus, inmates in higher custody levels are more likely to commit dominant infractions, especially in prisons with a higher percent of poor/lower class inmates. That is, here "the whole is greater than the sum of the parts" in the sense that the interaction effects of each variable are greater than their first-order effects would indicate.

The interaction between custody level and percent poor/lower class is not a surprising effect. Table 7.1 shows that custody level and percent poor/lower class are positive predictors of committing a dominant infraction. The fact that there is a cross-level interaction between custody level and percent poor/lower class helps clarify the theme of how two sources for the value placed on "physical prowess" or "toughness" may interact. Class and custody level spawns more dominant infractions than either alone or in additive combination. No other research, to the knowledge of the current researcher, has shown that class background and custody level have this synergistic effect. Moreover, the interaction is interesting because the two variables are derived from two different theories, prisonization and importation theories. Social class of inmates (importation) at the aggregate level results in an enhanced effect of custody level (prisonization) on dominant infractions. One might say that such a relationship could be the basis for integrating importation and prisonization theories.

Finally, an interesting relationship is seen by the positive interaction between custody level and percent of inmates with more than a high school education. It constitutes with what Cohen and colleagues call a "buffering" effect (2003:265). That is, the generally "beneficial" effect of having relatively well educated inmates is reduced somewhat in the face of inmates with higher custody levels. Note, however, that the effect is relatively small (.05) compared to the first-order effects for percent of more than a high school education (-.13) and custody level (.60).   It is not surprising that the prohibiting effect of relatively well-educated inmates is not as strong where there is presumably more of an inmate subculture emphasizing physical prowess and toughness by inmates in higher custody levels.

In summary, dominant infractions are a serious type of infraction committed against other inmates. Such violent infractions include committing an assault on another inmate with a weapon or any other means likely to produce injury and fighting or engaging in mutual physical confrontation. When examining the full model (Table 7.1) the variables with relatively strong importation theory effects are race and age at level-1. These findings are also consistent with prior research examining violent types of infractions. Specifically, the race effect is very similar to that found by Harer and Steffensmeier (1996), which they argue supports importation theory.

One variable that stands out as having one of the largest effects is custody level, a prisonization measure. It is not only having a large first-order effect, but it is involved in three interaction effects. One of the interaction effects indicates a synergistic effect – dominant infractions increase beyond that expected from the first-order additive component of the model. Particularly interesting is how the aggregate measure of social class interacts with custody level to heighten dominant infractions. Also present is a compensatory effect where the combination of variables results in less dominant infractions than found with first-order effects only: specifically, custody level and average time served. This finding suggests that to some extent these factors are somewhat redundant in bringing about dominant infractions such that the presence of one limits the other in bringing about dominant infractions. Finally, one buffering effect is found in which custody level lessens the reductive effect of a relatively well-educated inmate population.

The level-2 prisonization measure prevalence of dominant infractions is also a relatively strong predictor, third strongest overall. This finding indicates the importance of being housed in a prison where there is a higher presence of inmate-on-inmate conflict on committing a dominant infraction.

Defiant Infractions

Prison-level Predictors (Level-2)

The second infraction type to be discussed is the occurrence of defiant infractions (1=defiant infraction committed, 0=defiant infraction not committed). Defiant infractions are one of the most serious types of infractions in regard to harm done to others and threat to the prison staff. Defiant infractions are defined as serious, violent, confrontational, and directed at corrections staff. Abstractly, defiant infractions symbolize rejection of staff authority. (Recall that is the most common of infraction types).

Table 7.2 presents the individual-level and prison-level predictors as well as the cross-level interactions effects of committing a defiant infraction. Six of the nine prison-level variables tested are significantly related to committing a defiant infraction – all the prison-level predictors for importation and control theory and two for prisonization theory. The variance components for the full HLM logistic regression model (including level-1, level-2 and cross-level interactions) show that 78% of the between prison variation is explained by this model.[44]

Both of the importation variables at the aggregate level, percent African American and percent poor/lower class, are positively related to committing a defiant infraction. The

[44] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F. The variance components for the HLM model with only level-1 and level-2 variables (without cross-level interactions) are presented in Appendix F as well.

Table 7.2: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Defiant Infraction During Current Prison Stay (n=39,236)

Level-1 and Level-2 Main Effects and Cross-Level Interactions

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	.2464***	.0323	1.279	1.279
Poor/Lower Class	.1592***	.0362	1.173	1.173
Age	-.0496***	.0024	.9516	.5248
Percent W/ More Than H.S.	.0028***	.0008	1.003	1.009
Prevalence of Dominant Infractions	.0001***	.0000	1.000	1.012
Prevalence of Defiant Infractions	.0001***	.0000	1.000	1.014
Prevalence of Evasive Infractions	.0001***	.0000	1.000	1.012
Presenting Offense Serious/Violent	-.0681	.0421	.9342	.9342
Presenting Offense Serious/Non-Violent	-.0247	.0483	.9756	.9756
Presenting Offense Drugs	-.3166***	.0491	.7286	.7286
Social Control				
Married	-.1344***	.0379	.8742	.8742
Education Level	-.0438***	.0137	.9571	.9571
Prisonization				
Custody Level	.4485***	.0243	1.566	1.566
Prevalence of Minor Infractions	-.0007***	.0002	.9993	.9286
N Prior Incarcerations	.0515***	.0089	1.053	1.108
Time Served	.3372***	.0239	1.401	1.302
Average Time Served (years)	-.4821***	.1029	.6175	.8774
Level-2				
Importation				
Percent African American	.0076*	.0034	1.008	1.121
Percent Poor/Lower Class	.0155*	.0078	1.016	1.129
Social Control				
Percent W/ More Than H.S.	-.0807***	.0126	.9225	.7809
Prisonization				
Percent W/ Prior Incarceration	.0199***	.0058	1.020	1.188
Average Time Served (years)	-.3701	.2282	.6907	.9045
Prevalence of Dominant Infractions	-.0006	.0006	.9994	.9295
Prevalence of Defiant Infractions	.0008	.0005	1.001	1.118
Prevalence of Evasive Infractions	.0009**	.0004	1.001	1.114
Prevalence of Minor Infractions	.0008*	.0004	1.001	1.088
Intercept (log odds)	-1.864 (.1551)			

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

IQR effects of these variables indicate that they are both similar in strength in predicting a defiant infraction. Specifically, the results show that as the percent of African American inmates within a prison increases from the 25th to the 75th percentile, the odds of a defiant infraction being committed increases 12%. An increase in the percent of poor/lower class inmates from the 25th to the 75th percentile increases the odds of a defiant infraction being committed by 13%.

The level-2 social control measure, percent of inmates in a prison with more than a high school education, is negatively related to committing a defiant infraction. It is also the strongest level-2 predictor in the model. As the percent of inmates with more than a high school education increases from the 25th to 75th percentile, the odds of a defiant infraction being committed decrease 22%.

Finally, there are three prisonization level-2 variables significantly related to committing a defiant infraction: percent of a prison with a prior incarceration, the prevalence of evasive infractions committed within a prison and prevalence of minor uncooperative infractions committed within a prison. All of these predictors are positively related to committing a defiant infraction. This means that inmates in prisons where there is a higher percent of inmates with a prior incarceration, and a higher prevalence of evasive and minor uncooperative infractions are more likely to commit a defiant infraction.[45]

Cross-Level Interactions (Level-1 by Level-2)

Table 7.2 also presents the significant cross-level interactions predicting the occurrence of a defiant infraction. As discussed in the previous chapter, in regard to the

[45] It is interesting to note that the prevalence of defiant infractions measure is not significantly related to committing a defiant infraction. However, this lack of a relationship is probably due to the fact that the defiant infraction type is most common and is most likely distributed more evenly across prisons.

random effects of the level-1 predictors, cross-level interactions were tested for the level-1 predictors: Age, custody level, time served and presenting offense serious/violent. Note, however, that the sizes of the interaction effects are relatively small. The presenting offense serious/violent measure was not significantly related to any of the level-2 measures. This means that the presenting offense serious/violent variable varies significantly across prisons. However, it does not significantly interact with any of the contextual level measures presented here.

The results presented show that age interacts with percent with more than a high school education, prevalence of dominant infractions, prevalence of defiant infractions, and prevalence of evasive infractions. That is, the effect of age is conditional on the characteristics of these four prison-level variables. More specifically, the positive interaction between age and the four contextual variables indicates that there are two buffering effects and two compensatory effects.

The two compensatory effects indicate that older inmates are less likely to commit a defiant infraction and that effect is reduced somewhat in the presence of more inmates (higher percentage) who have more than a high school education and in prisons where there is a higher prevalence of dominant infractions committed. Note that both of the first-order effects are negative, reducing the probability of a defiant infraction, but the interaction effects are positive (opposite in sign) indicative of a compensatory effect. For the first compensatory effect either age or percent of inmates with more than a high school education reduces the likelihood of a defiant infraction -- one partially compensates for the other. For the second compensatory effect it is either age or prevalence of dominant infractions reducing the likelihood of a defiant infraction.

Further, the results show that the effect of age is buffered or reduced by the prevalence of defiant and evasive infraction types --each of which has a positive impact on the likelihood of a defiant infraction. That is, whereas age in the absence of these infractions has a strong negative effect on the probability of a defiant infraction, that probability is not as high in the presence of such high defiant and evasive infraction "climates."

There is also a negative interaction between custody level and the prevalence of minor uncooperative infractions. Because the main effects of custody level and the prevalence of minor uncooperative infractions are both positive, and the interaction term is negative, one can speak of a compensatory effect. This means that the prevalence of minor uncooperative infractions reduces the effect of custody level on committing defiant infractions. Or, in other words, the interaction between custody level and the prevalence of minor uncooperative infractions indicates that inmates in higher custody levels are somewhat less likely to commit a defiant infraction where there is a higher prevalence of minor uncooperative infractions than if there was no such prevalence. It could be that if the normative climate of a prison is one in which minor uncooperative infractions are one way of dealing with confinement, then the independent effects of being in a higher custody level are not as strong on committing a defiant infraction.

Finally, there is a negative interaction between time served and the average time served (years). This finding indicates a buffering effect in that an inmate who has served more time is more likely to commit a defiant infraction, but less so in a prison with a higher average of time served by all inmates in the prison. This result could correspond to often heard complaints about management of prisons with many "short timers". Essentially, those who have, say, less than a year of time to serve on their mandated sentence will often disobey the staff because they have “little to lose” in that their release date is unlikely to change as a result of a defiant infraction. The interaction effect observed here is especially interesting because the inmates with relatively long sentences are more likely to have a defiant infraction, but that is less true in prisons with relatively many serving long sentences. Stated another way, those serving a relatively long time in prison with many “short timers” are more likely to have a defiant infraction. This is suggestive of a “relative deprivation” effect: the relatively “long timers” may resent the fact that the others in their prison have so little time to serve.

In summary, defiant infractions by definition are an “oppositional” type of infraction committed against correctional staff and/or in disregard for staff authority. For instance, defiant infractions encompass committing an assault on a staff member with a weapon or by any other means likely to produce injury, interfering with a staff member in the performance of his or her duties, and willfully disobeying or failing to obey any lawful order of a prison official or employee. Table 7.2 shows that custody level, a level-1 prisonization measure, is the strongest predictor of committing a defiant infraction. The other significantly related prisonization measures are time served and number of prior incarcerations (level-1 variables), and percent with a prior incarceration and the prevalence of evasive and minor uncooperative infractions (level-2 variables). According to the IQR effects, “time served” is the third strongest predictor of committing a defiant infraction.

All three social control measures are negatively related to committing a defiant infraction. The two level-1 measures, being married and education level, are relatively weak predictors. However, they have the expected impact on committing a defiant infraction. The level-2 measure “percent of inmates with more than a high school education” is a stronger predictor of committing a defiant infraction (reducing the odds of a defiant infraction by roughly 22%) than the level-1 control measures and is the strongest level-2 measure overall. The strength of this effect indicates the importance of social control at the prison level in combating defiant behavior.

Finally, six importation measures are significant predictors of committing a defiant infraction. The strongest importation measures are age and African American (level-1). Specifically, defiant infractions are more likely to be committed by younger inmates and African American inmates. However, the "beneficial" effects of aging in reducing the chance of a defiant infraction are buffered by the prevalence of defiant and evasive infraction types.

Evasive Infractions

Prison-level Predictors (Level-2)

The next infraction type to be discussed is evasive infractions (1=evasive infraction committed, 0=evasive infraction not committed). Evasive infractions are defined as devious, non-confrontational acts, opposed to confrontational dangerous or violent acts.

Table 7.3 presents the significant individual-level and prison-level predictors as well as the cross-level interaction effects of committing an evasive infraction. Of the nine contextual variables tested, five are significantly related to committing an evasive infraction -- two importation measures and three prisonization measures. The variance components for the full HLM logistic regression model (including level-1, level-2 and cross-level interactions) show that 75% of the between prison variation is explained by this model.[46]

[46] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F. The variance components for the HLM model with only level-1 and level-2 variables (without cross-level interactions) are presented in Appendix F as well.

Table 7.3: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of an Evasive Infraction During Current Prison Stay (n=39,236)

Level-1 and Level-2 Main Effects and Cross-Level Interactions

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	-.1933***	.0454	.8242	.8242
Poor/Lower Class	.1971***	.0526	1.218	1.218
Age	-.0516***	.0046	.9497	.5113
Percent W/ More Than H.S.	.0025*	.0013	1.002	1.008
Percent W Prior Incarceration	.0016**	.0006	1.002	1.014
Presenting Offense Serious/Violent	-.0702	.0548	.9322	.9322
Presenting Offense Serious/Non-Violent	-.0102	.0548	.9899	.9899
Presenting Offense Drugs	-.3784***	.0645	.6849	.6849
Social Control				
Married	.0020	.0559	1.002	1.002
Education Level	-.0120	.0228	.9881	.9881
Prisonization				
Custody Level	.4019***	.0272	1.495	1.495
N Prior Incarcerations	.0416**	.0145	1.043	1.087
Time Served	.1967***	.0232	1.217	1.167
Level-2				
Importation				
Percent African American	.0108*	.0046	1.011	1.176
Percent Poor/Lower Class	.0233**	.0091	1.024	1.199
Social Control				
Percent W/ More Than H.S.	-.0218	.0170	.9784	.9354
Prisonization				
Percent W/ Prior Incarceration	.0394***	.0072	1.040	1.406
Average Time Served (years)	-.2484	.2028	.7800	.9348
Prevalence of Dominant Infractions	-.0011	.0007	.9989	.8745
Prevalence of Defiant Infractions	-.0030***	.0004	.9971	.6580
Prevalence of Evasive Infractions	.0034***	.0004	1.003	1.502
Prevalence of Minor Infractions	.0002	.0003	1.000	1.021
Intercept (log odds)	-3.045 (.0476)			

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

Table 7.3 shows that the two importation measures, percent African American and percent poor/lower class are positively related to committing an evasive infraction. As indicated by the IQR effects, both of these measures are similar in strength in predicting evasive infractions. As the percent of poor/lower class inmates within a prison increases from the 25th to the 75th percentile, the odds of an evasive infraction being committed increase 20%. The "percent African American" variable is not quite as strong of a predictor, increasing the odds of an evasive infraction being committed by 18%.

There are three statistically significant level-2 prisonization predictors of committing an evasive infraction: percent of prisoners with a prior incarceration, prevalence of defiant infractions and prevalence of evasive infractions. As indicated by the IQR effects, percent of prisoners with a prior incarceration and prevalence of evasive infractions are relatively strong predictors of committing an evasive infraction. In fact, the prevalence of evasive infractions is tied with custody level (level-1) for the strongest predictor overall. The "percent of inmates with a prior incarceration" variable and the "prevalence of evasive infractions" variable are both positively related to that infraction type. The IQR effect can be interpreted as follows: as the prevalence of evasive infractions committed within a prison compared to other prisons increases from the 25th to 75th percentile, the odds of an evasive infraction being committed increases 50%. When looking at the percent of prisoners with a prior incarceration measure, the results show that inmates are more likely to commit an evasive infraction in prisons where there is a higher percent of prisoners with a prior incarceration.

The prevalence of defiant infractions measure is negatively related to committing an evasive infraction. This means that in prisons with a higher prevalence of defiant infractions being committed (infractions directed at corrections staff), there are fewer evasive infractions committed.

Cross-Level Interactions (Level-1 by Level-2)

Table 7.3 presents the significant cross-level interactions that predict the occurrence of an evasive infraction. As discussed in the previous chapter, in regard to the random effects of the level-1 predictors, cross-level interactions were tested for the level-1 predictors age and presenting offense serious/violent. Note, however, that the sizes of the interaction effects are relatively small. The variable presenting offense serious/violent did not significantly interact with any of the level-2 measures. This means that the presenting offense serious/violent measure does vary significantly across prisons. However, it does not significantly interact with any of the contextual level measures presented here.

The results presented show that age interacts with percent with more than a high school education and percent with a prior incarceration. That is, the effect of age is conditional on the characteristics of these two prison-level variables. The positive interaction between age and the two prison-level variables indicates that there is one compensatory effect and one buffering effect.

The positive interaction between age and percent with more than a high school education is the compensatory effect. This means that older inmates are less likely to commit an evasive infraction and the effect is reduced somewhat in the presence of more inmates who have more education because education is compensating the age effect. The second interaction, between age and percent with a prior incarceration is considered a buffering effect because the first-order effects of age and percent with a prior incarceration have opposite signs. That is, the effect of age is buffered or reduced by a higher percent of inmates with a prior incarceration. In other words, in the absence of the percent of inmates with a prior incarceration, age has a strong negative effect on the odds of committing an evasive infraction; however, the odds are not as high in the presence of a higher percent of inmates with a prior incarceration.

In summary, evasive infractions are a non-confrontational, devious type of infraction. A few examples of such infractions are barter or trade; loan or borrow; solicit or engage in any business activity, be in an unauthorized location and possessing contraband. The strongest predictors of this type of infraction are the importation and prisonization measures. The social control measures are not as important in predicting the occurrence of an evasive infraction. In fact, the level-2 education measure, which has been a relatively strong predictor of the other infraction types, is not statistically related to committing an evasive infraction.

Four of the importation measures (African American, poor/lower class, age, and presenting offense drugs) and both level-2 measures (percent African American and percent poor/lower class) are significant predictors of committing an evasive infraction. One of the strongest predictors is age. Age is negatively related to committing an evasive infraction. However, the effect of age is conditional on the effects of percent with more than a high school education and percent with a prior incarceration. Of particular interest is the negative relationship between the race variable and committing an evasive infraction. The results indicate that whites are more likely to commit this type of infraction.

All three level-1 prisonization measures and three level-2 prisonization measures are significant predictors of committing an evasive infraction. The strongest of these predictors are custody level (level-1) and prevalence of evasive infractions (level-2). Inmates housed in higher custody levels and in prisons with a higher prevalence of evasive infractions are more likely to commit an evasive infraction.

Minor Uncooperative Infractions

Prison-level Predictors (Level-2)

The next infraction type discussed is minor uncooperative infractions (1=minor uncooperative infraction committed, 0=minor uncooperative infraction not committed). Minor uncooperative infractions are among the least serious types of infraction behavior and include such behaviors as unauthorized funds, illegal clothing, and misuse supplies. Table 7.4 presents the individual and prison-level predictors as well as the cross-level interaction effects of committing a minor uncooperative infraction. Seven of the nine contextual predictors are significantly related to committing a minor uncooperative infraction – one importation measure, one social control measure and five prisonization measures. The variance components for the full HLM logistic regression model (including level-1, level-2 and cross-level interactions) show that 89% of the between prison variation is explained by this model.[47]

The importation measure percent African American is positively related to committing a minor uncooperative infraction and is the third strongest level-2 predictor. This result indicates that inmates are more likely to commit a minor uncooperative infraction in prisons with a higher percent of African American inmates.

The level-2 social control measure "percent with more than a high school education" is negatively related to committing a minor uncooperative infraction. This result indicates that a higher percent of inmates with more than a high school education is negatively related to committing this infraction type.

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[47] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F. The variance components for the HLM model with only level-1 and level-2 variables (without cross-level interactions) are presented in Appendix F as well.

Table 7.4: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Minor Uncooperative Infraction During Current Prison Stay (n=39,236)

	Level-1 and Level-2 Main Effects and Cross-Level Interactions			
Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	.0537	.0522	1.055	1.055
Poor/Lower Class	.1397*	.0679	1.150	1.150
Age	-.0313***	.0034	.9692	.6657
Presenting Offense Serious/Violent	-.0167	.0688	.9835	.9835
Presenting Offense Serious/Non-Violent	-.2497***	.0682	.7791	.7791
Presenting Offense Drugs	-.4147***	.0962	.6605	.6605
Social Control				
Married	-.0480	.0685	.9531	.9531
Education Level	.0372	.0297	1.038	1.038
Prisonization				
Custody Level	.3640***	.0395	1.439	1.439
Prevalence of Minor Infractions	-.0007*	.0003	.9993	.9286
N Prior Incarcerations	.0076	.0155	1.008	1.015
Time Served	.3871***	.0271	1.473	1.354
Percent W/ More Than H.S.	-.0178**	.0069	.9823	.9469
Average Time Served (years)	-.5190***	.1236	.5951	.8687
Level-2				
Importation				
Percent African American	.0119**	.0049	1.012	1.195
Percent Poor/Lower Class	-.0043	.0075	.9957	.9670
Social Control				
Percent W/ More Than H.S.	-.0432**	.0139	.9577	.8760
Prisonization				
Percent W/ Prior Incarceration	.0122*	.0050	1.012	1.111
Average Time Served (years)	-.0950	.1471	.9094	.9746
Prevalence of Dominant Infractions	-.0016***	.0004	.9984	.8228
Prevalence of Defiant Infractions	-.0020***	.0003	.9980	.7565
Prevalence of Evasive Infractions	-.0014***	.0004	.9986	.8457
Prevalence of Minor Infractions	.0026***	.0004	1.003	1.317
Intercept (log odds)	-3.169 (.0420)			

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

Table 7.4 shows there are five prisonization level-2 predictors significantly related to committing a minor uncooperative infraction: percent of inmates with a prior incarceration, prevalence of dominant infractions, prevalence of defiant infractions, prevalence of evasive infractions and prevalence of minor uncooperative infractions. The percent of inmates with a prior incarceration and prevalence of minor uncooperative infractions are both positively related to committing a minor uncooperative infraction. Thus, inmates in prisons with a higher percent of inmates with a prior incarceration and a higher prevalence of minor uncooperative infractions are more likely to commit a minor uncooperative infraction. The prevalence of minor uncooperative infractions is the strongest level-2 predictor in this model.

The prevalence of dominant, defiant and evasive infractions within a prison all are negatively related to committing a minor uncooperative infraction. These findings indicate that a lower prevalence of dominant, defiant and evasive infractions within a prison increases the odds of a minor uncooperative infraction being committed.

Cross-Level Interactions (Level-1 by Level-2)

Table 7.4 presents the significant cross-level interactions predictive of committing a minor uncooperative infraction. As discussed in the previous chapter, in regard to the random effects of the level-1 predictors, cross-level interactions were tested for the level-1 predictors: custody level and time served. Custody level interacts with the prevalence of minor uncooperative infractions. Time served interacts with percent with more than a high school education and average time served (years).

As seen from the IQR effects, custody level is the strongest predictor of committing a minor uncooperative infraction when the level-2 variables are zero (that is, the level-2 variables are at “average,” as the variables are grand mean centered, so the mean score is zero). However, the custody level effect on committing a minor uncooperative infraction is affected, or conditional on the "prevalence of minor uncooperative infractions". Since the two main-effects are of the same sign (both positive) this interaction can be referred to as a compensatory effect. This means that the prevalence of minor uncooperative infractions reduces the effect of custody level on committing minor uncooperative infractions. Or, in other words, the interaction between custody level and the prevalence of minor uncooperative infractions indicates that inmates in higher custody levels are somewhat less likely to commit a minor uncooperative infraction where there is a higher prevalence of minor uncooperative infractions than if there were no such prevalence. It could be that if the normative climate of a prison is one in which minor uncooperative infractions are one way of dealing with confinement, then the independent effects of being in a higher custody level are not as strong on committing a minor uncooperative infraction. It appears the effect of one variable compensates for the other in generating minor uncooperative infractions. That is, the odds of a minor uncooperative infraction are reduced somewhat by the presence of both a high custody level and a high prevalence of minor uncooperative infractions, relative to the expected levels if each only had an additive effect.

The level-1 variable time served negatively interacts with the percent of inmates with more than a high school education and average time served (years). Both interactions can be discussed in terms of a buffering effect. The negative interaction between time served and percent of inmates with more than a high school education indicates that minor uncooperative infractions are more likely to be committed by inmates who have served more time, but less so when there are a higher percentage of inmates with more education. It appears that the more educated inmates is having a beneficial impact on inmates who have served more time, reducing the occurrence of minor uncooperative infractions, where otherwise inmates who have served more time would be committing more minor uncooperative infractions.

The negative interaction between time served and average time served (years) indicates that minor uncooperative infractions are more likely to be committed by inmates who have served more time, but less so when there is a higher average of time served. This effect could be interpreted similarly to how it was for defiant infractions indicating a "relative deprivation" effect. It could be that "long timers" resent the fact that there are other inmates in their prison who have served less time and thus act out by committing more minor uncooperative infractions.

In summary, minor uncooperative infractions are a non-serious type of infraction violation. Examples of such infractions are possessing funds in the form other than authorized by Division of Prisons' Policy, in excess of the authorized amount, or from an unauthorized source and misuse or use the telephone or mail without authorization. The strongest predictors of this type of infraction are the importation and prisonization measures. The social control measures do not appear to be as important in predicting the occurrence of a minor uncooperative infraction.

The strongest predictor of committing a minor uncooperative infraction is the prisonization measure custody level. Inmates in higher custody levels are more likely to commit minor uncooperative infractions. This effect is conditional on the prevalence of minor uncooperative infractions. The prisonization measure time served is also an important factor -- in fact, it is the second strongest predictor overall. Inmates who have served more time in prison are more likely to commit a minor uncooperative infraction. This effect is conditional on the percent of inmates with more than a high school education and average time served.

The strongest importation predictor of committing a minor uncooperative infraction is age. Minor uncooperative infractions are more likely to be committed by younger inmates. Interestingly, the African American measure is not a significant predictor. Thus, neither whites nor African Americans are more likely to commit this infraction type.

Neither of the level-1 social control measures is statistically related to committing a minor uncooperative infraction. However, the level-2 social control measure, "percent of a prison with more than a high school education", is negatively related to committing a minor uncooperative infraction. Therefore, it appears that for minor uncooperative infractions, social control is only effective at the prison level.

Substance Abuse Infractions

Prison-level Predictors (Level-2)

Table 7.5 presents the individual-level and prison-level predictors, as well as, the cross-level interactions of committing a substance abuse infraction (1=substance abuse infraction committed, 0=substance abuse infraction not committed). Five of the nine contextual variables tested are significantly related to committing a substance abuse infraction. Measures of all three theories have an impact on this type of behavior. The variance components for the full HLM logistic regression model (including level-1, level-2 and cross-level interactions) show that 65% of the between prison variation is explained by this model.[48]

[48] A table reporting the actual variance component numbers for the intercept and slopes with random effect coefficients can be seen in Appendix F. The variance components for the HLM model with only level-1 and level-2 variables (without cross-level interactions) are presented in Appendix F as well.

Table 7.5: HLM: Effects of Importation, Social Control and Prisonization Factors Predicting the Occurrence of a Substance Abuse Infraction During Current Prison Stay (n=39,236)

Level-1 and Level-2 Main Effects and Cross-Level Interactions

Variables	Coef.	Se	Exp. (Coef.)	IQR effects
Level-1				
Importation				
African American	-.4567***	.0495	.6334	.6334
Poor/Lower Class	-.0025	.0425	.9975	.9975
Age	-.0290***	.0024	.9714	.6859
Presenting Offense Serious/Violent	-.1076**	.0361	.8980	.8980
Presenting Offense Serious/Non-Violent	-.2617***	.0582	.7697	.7697
Presenting Offense Drugs	-.3679***	.0583	.6922	.6922
Social Control				
Married	-.1691***	.0518	.8444	.8444
Education Level	.0188	.0251	1.019	1.019
Prisonization				
Custody Level	.4626***	.0261	1.588	1.588
Percent W/ More Than H.S.	.0301***	.0071	1.031	1.097
Prevalence of Dominant Infractions	-.0006**	.0002	.9994	.9295
Prevalence of Defiant Infractions	-.0004*	.0002	.9996	.9457
Prevalence of Minor Infractions	-.0008**	.0003	.9992	.9188
N Prior Incarcerations	.0823***	.0107	1.086	1.179
Time Served	.3977***	.0239	1.423	1.318
Percent African American	-.0075***	.0018	.9925	.8936
Percent W/ More Than H.S.	.0182**	.0068	1.018	1.057
Percent W Prior Incarceration	-.0095**	.0031	.9905	.9211
Average Time Served	-.2518**	.0934	.7774	.9340
Level-2				
Importation				
Percent African American	.0146**	.0051	1.015	1.245
Percent Poor/Lower Class	-.0001	.0090	.9999	.9992
Social Control				
Percent W/ More Than H.S.	-.0416*	.0198	.9593	.8803
Prisonization				
Percent W/ Prior Incarceration	.0366***	.0087	1.037	1.373
Average Time Served (years)	.1809	.2573	1.198	1.050
Prevalence of Dominant Infractions	.0043***	.0006	1.004	1.689
Prevalence of Defiant Infractions	-.0026***	.0005	.9974	.6957
Prevalence of Evasive Infractions	.0004	.0006	1.000	1.049
Prevalence of Minor Infractions	-.0001	.0005	.9999	.9895
Intercept (log odds)	-3.520 (.0296)			

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

The importation measure percent African American is positively related to committing a substance abuse infraction. This means that inmates are more likely to commit this infraction in prisons with a higher percent of African American inmates.

Table 7.5 shows that the social control measure “percent of a prison population with more than a high school education”, is negatively related to committing a substance abuse infraction. Therefore, inmates are less likely to commit this infraction in prisons where there is a higher percent of inmates with more than a high school education.

Table 7.5 shows three level-2 prisonization variables significantly related to committing a substance abuse infraction: percent with a prior incarceration, prevalence of dominant infractions, and prevalence of defiant infractions. The first two measures (percent with a prior incarceration and prevalence of dominant infractions) are positively related to committing a substance abuse infraction. These results indicate that inmates are more likely to commit a substance abuse infraction in prisons with a higher percent of inmates with a prior incarceration and higher prevalence of dominant infractions. Note that the IQR effects indicate that the prevalence of dominant infractions is the strongest overall predictor of committing this infraction type. Percent with a prior incarceration is also a very strong predictor.

Finally, the prevalence of defiant infractions is negatively related to substance abuse infractions. This finding indicates that substance abuse infractions are less likely to be committed in prisons with a higher prevalence of defiant infractions.

Cross-Level Interactions (Level-1 by Level-2)

Table 7.5 also presents the significant cross-level interactions predicting the occurrence of a substance abuse infraction. As discussed in the pervious chapter, in regard to random effects of the level-1 predictors, two level-1 predictors were tested for cross-level interactions: custody level and time served. The prisonization measure custody level interacts with percent with more than a high school education, prevalence of dominant, defiant, and minor uncooperative infractions. The prisonization measure time served interacts with percent African American, percent with more than a high school education, percent with a prior incarceration, and average time served.

The IQR effects indicate that custody level is the second strongest predictor of committing a substance abuse infraction when the level-2 variables are zero. The cross-level interactions show that custody level positively interacts with percent of inmates with more education and negatively interacts with the prevalence of the different infraction types (dominant, defiant, and minor uncooperative). The interactions between custody level and percent with more than a high school education, prevalence of defiant infractions and prevalence of minor uncooperative infractions are all buffering effects. The interactions between custody level and the prevalence of defiant and minor uncooperative infractions show that substance abuse infractions are more likely to be committed by inmates in higher custody levels, but less so when there is a higher prevalence of defiant and minor uncooperative infractions. The positive interaction between custody level and percent of inmates with more than a high school education indicates that the generally “beneficial” effect of having relatively well educated inmates is reduced somewhat in the face of higher custody levels. Stated differently, higher custody levels “buffer” the beneficial effect of a relatively well-educated inmate population.

The interaction between custody level and the prevalence of dominant infractions is a compensatory effect. This negative interaction indicates that inmates in higher custody levels are more likely to commit a substance abuse infraction, but the effect is less so when there is a higher prevalence of dominant infractions. Thus, to some extent, higher custody levels or the prevalence of dominant infractions can lead to more substance abuse, but the effect of one is mitigated by the presence of the other.

The level-1 prisonization measure time served negatively interacts with percent African American, percent with a prior incarceration and average time served (years). These interactions are all compensatory effects. These findings indicate that inmates who have served more time are more likely to commit a substance abuse infraction, but less so in prisons with a higher percent of African Americans, higher percent with a prior incarceration and a higher average time served. Stated differently, the amount of substance abuse an individual commits is limited somewhat by the presence of more time served, a higher percent of African Americans, a higher percent with a prior incarceration, and higher average time served relative to the expectation that each only has a singular additive effect. For example, the amount of substance abuse infractions the individual commits is limited somewhat by the presence of both a high amount of time served and a high percent African American, relative to the expectation that each only has an additive effect. (Thus, one could say that "the whole is equal to less than the sum of the parts" Cohen et al 2003:285). The results show that either percent African American or time served increases the odds of substance abuse infractions, but together their effects are less than if either only had an additive effect.

The positive interaction between time served and percent with more than a high school education can be discussed as a buffering effect and indicates that inmates with more time served are more likely to commit a substance abuse infraction, but less so in prisons with a higher percent of educated inmates. So, again the results show that the generally "beneficial" effect of having relatively well educated inmates is reduced somewhat in the face of higher custody levels when predicting substance abuse infractions.

In summary, substance abuse infractions include substance possession and inhaling a substance. Measures of all three theories – importation, prisonization and social control — are seen to have an effect in some way on the occurrence of substance abuse infractions.

The strongest importation measures are African American and age, both level-1 measures. The African American measure is the third strongest predictor overall. Interestingly, whites are more likely to commit a substance abuse infraction than African Americans, net of the effects of all of the other variables in the model.

Two social control measures are significantly related to committing a substance abuse infraction: Married (level-1) and percent with more than a high school education (level-2). Note that the married measure is only a statistically significant predictor of substance abuse infractions and defiant infractions. The percent of a prison with inmates with more than a high school education is negatively related to committing a substance abuse infraction, however, is not one of the strongest effects. Therefore, although social control has an effect on substance abuse infractions, in general, the effect is relatively minor.

The strongest predictors of committing a substance abuse infraction are prisonization measures, specifically custody level (level-1), percent with a prior incarceration, and prevalence of dominant infractions (level-2). Inmates housed in higher custody levels are more likely to commit a substance abuse infraction. The custody level effect is conditional on four level-2 measures. Further, the occurrence of a substance abuse infraction is more likely in prisons with a higher percent of inmates with a prior incarceration and a higher prevalence of dominant infractions.

Comparison of all Five Infraction Types and Theoretical Interpretation

When examining all five infraction types one can see some similarities and some differences in the predictors' effects across infraction types. The question is whether the differences are pronounced enough to validate the typology of infraction behavior. The current research argues that the results do indeed support the validity of the typology of infraction behavior. Even though there are a few prison-level measures that are consistent predictors of misbehavior there are enough substantive differences to uphold the infraction typology. In fact, recall that some similarities across the infraction types were expected from the prisonization theoretical perspective.[49] A basic premise of prisonization theory is that anyone can be "prisonized" and thus commit infractions consistent with the norms of the inmate subculture. In general, this theory contends that the prison context is ripe for prison misbehavior and suggests that inmates will engage in a wide variety of offense types. Thus, the fact that "percent with more than a prior incarceration", a prisonization measure, is significantly related to all the infraction types is not surprising.

Within this section of the chapter, the goal is to bring in theoretical interpretation to make sense of the findings and to discuss the different predictors of each infraction to illustrate how the typology is validated by the results. To make it easier to "see" the

[49] Although, prisonization theory in general predicts versatility of infraction behavior, there are a few exceptions. For instance, the theory seems to imply that inmates are motivated to commit more of some types of infractions than others. For example, because of the "anti-staff" orientation of the prison subculture, one might expect that there would be more infractions committed against correctional staff. Also, since prisonization theory posits that many of the "pains of imprisonment" are due to the presence of other inmates (who threaten each other at times) then one might expect a prevalence of infractions of inmate-on-inmate violence. Finally, if different subcultures evolve within a prison, then it would be likely that prisons with a high prevalence of certain types of infractions would provide a normative climate to encourage more of those same types of infractions (whatever they might be).

differences, Table 7.6 shows the exponentiated results again from each of the Tables 7.1 through 7.5. One way to compare the five infraction types is to examine the effects of each of the prison-level variables on the different infraction types. The cross-level interactions also need to be discussed at this time. The cross-level interactions are interesting because some of the variables that are the most consistent predictors of each of the infraction types are conditional on different level-2 measures.

Discussion of some of the most theoretically interesting cross-level interactions will be first. When looking at the level-1 predictors it is seen that age is a consistently strong predictor of all the infraction types. However, one notable difference that will be briefly discussed is in regard to the defiant infraction type, which involves buffering effects of several prison-level measures of the prevalence of various infraction types. Where the various infraction types are more prevalent (defiant and evasive infractions), age does not result in as large of a decrease in defiant infractions. This means that age is not as prominent in decreasing defiant infractions if defiant and evasive infractions are sufficiently prevalent in the prisons. However, it should be noted that age has a rather large negative first-order effect in the defiant model so there is more age effect to lose, so to speak, for defiant infractions. At an abstract level, it seems to make sense that aging and defiant infractions are mitigated or buffered by the prevalence of defiant and evasive infractions in that it suggests relatively low levels of control over the inmates in those institutions. In other words, it is not surprising that defiant infractions would be lessening the age effect in such “low control” institutions.

Age is also involved in two cross-level interactions when predicting evasive infractions. The effect of age is reduced by the presence of more inmates with a prior incarceration. This means that in a context with a lot of inmates with prior incarcerations, the

Table 7.6: HLM: Summary of Effects of Importation, Social Control and Prisonization Factors Predicting the Five Infraction Types (n=39,236)

	Dominant	Defiant	Evasive	Minor	Substance
Importation	Exp. Coef.	Exp. Coef.	Exp. Coef.	Exp. Coef.	Exp. Coef.
African American	1.632***	1.279***	.8242***	1.055	.6334***
Poor/Lower Class	1.004	1.173***	1.218***	.1150*	.9975
Age	.9714***	.9516***	.9497***	.9692***	.9714***
Percent W Prior Incarceration			1.002**		
Percent W More Than H.S.		1.003***	1.002*		
Prev. of Dominant Infract.		1.000***			
Prev. of Defiant Infract.		1.000***			
Prev. of Evasive Infract.		1.000***			
Presenting Offense Serious/Viol	1.001	.9342	.9322	.9835	.8980**
Presenting Offense Ser/Non-viol	1.001	.9756	.9899	.7791***	.7697***
Presenting Offense Drugs	.7409***	.7286***	.6849***	.6605***	.6922***
Social Control					
Married	.9390	.8742***	1.002	.9531	.8444***
Education Level	.9222***	.9571***	.9881	1.038	1.019
Prisonization					
Custody Level	1.830***	1.566***	1.495***	1.439***	1.588***
Percent Poor/Lower Class	1.025***				
Percent W/ More Than H.S.	1.054***				1.031***
Average Time Served (yrs)	.4855***				
Prev. of Defiant Infract.					.9996*
Prev. of Minor Infract.		.9993***		.9993*	.9992**
Prev. of Dominant Infract.					1.013**
N Prior Incarcerations	1.015	1.053***	1.043**	1.008	1.086***
Time Served (years)	1.239***	1.401***	1.217***	1.473***	1.423***
Percent W/ More Than H.S.				.9823**	1.018**
Average Time Served (yrs)		.6175***		.5951***	.7774**
Percent W Prior Incarc.					.9905**
Percent African American					.9925***
Level-2 Measures					
Importation					
Percent African American	1.007	1.008*	1.011*	1.012**	1.015**
Percent Poor/Lower Class	1.016	1.016*	1.024**	.9957	.9999
Social Control					
Percent W/ More Than H.S.	.8760***	.9225***	.9784	.9577**	.9593*
Prisonization					
Percent W Prior Incarceration	1.020**	1.020***	1.040***	1.012*	1.037***
Average Time Served (years)	1.720**	.6907	.7800	.9094	1.198
Prev. of Dominant Infract.	1.002***	.9994	.9989	.9984***	1.004***
Prev. of Defiant Infract.	1.002**	1.001	.9971***	.9980***	.9974***
Prev. of Evasive Infract.	1.001	1.001**	1.003***	.9986***	1.000
Prev. of Minor Infract.	.9991*	1.001*	1.000	1.003***	.9999
Intercept	-3.753	-1.864	-3.045	-3.169	-3.520

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

beneficial effects of aging are lost to some extent. Percent with more than a high school education is compensating the age effect on committing an evasive infraction. This is an interesting finding because the mechanisms of two theories are at work placating off each other on the occurrence of an evasive infraction.

Custody level, another consistent level-1 predictor, also is involved with some cross-level interactional effects for some infraction types. For dominant infractions the results show that custody level interacts with percent poor/lower class, percent with more than a high school education and average time served (years). Most interesting theoretically, perhaps, is the synergistic effect of percent poor/lower class and custody level. Here, there are more dominant infractions where there are both higher custody levels and more lower class inmates. Instead of conceptual "redundancy" there seems to be a modestly "explosive" reaction of the two components that results in even more dominant infractions: lower class inmates in high custody environments may feel they have nothing to lose or may subscribe to lower class values of the importance of "physical prowess" and "toughness", resulting in more dominant infractions.

Also interesting is the buffering effect that custody level has on the aggregate education level variable's impact on dominant and substance abuse infractions: it lessens the reductive effect of mean education level on dominant infractions and substance abuse infractions. Thus, there are limits to the beneficial effects of more educated inmates – higher custody levels define those limits for some infraction types. It is not clear, however, why those two infractions types are impacted as opposed to the other three (defiant, evasive, and minor uncooperative).

The level-1 time served measures is also a consistent predictor of the different infraction types. Interestingly, the cross-level interaction between time served and average time served is present in the defiant, minor uncooperative, and substance abuse infraction models. This relationship has a buffering effect for defiant and minor uncooperative infractions and a compensatory effect for substance abuse infractions. That is, either time served or average time served can bring about substance abuse infractions. As for defiant and minor uncooperative infractions, while time served is increasing the chances of these two infraction types, average time served is decreasing those chances.

In general, the buffering effects seem more theoretically interesting in that they could be attributed to a “relative deprivation” effect. The “long timer” in prisons with relatively many short timers may be prone to defiant deviance and minor uncooperative behavior -- out of perceptions of personal injustice (relative deprivation) -- whereas the “long timer” in prisons with many other “long timers” is actually disinclined to participate in defiant and minor uncooperative infractions because serving a long time is “normal”.

In summary of the cross-level interaction effects, the results show that the effects are relatively small in magnitude. Although, a few of the interactions are theoretically interesting and indicate that to some extent the level-1 predictors are impacted by context. Therefore, they are an important contribution.

Discussion will now focus on the prison-level main-effects to examine whether there are different predictors of the infraction types. In general, it is seen that there are many similar effects of the prison-level variables across the range of infractions. However, the differences which do exist are important and worth discussing.

The importation measure “percent African American” is a fairly consistent predictor of the infraction types. However, this measure is not statistically related to committing a dominant infraction. For the infraction types it is a significant predictor, it appears that its effect is much larger for substance abuse infractions and much smaller, relatively speaking, for defiant infractions.

From a theoretical perspective these results point to a possible “subcultural” effect of race being imported into the prison when there is higher percentage of African American inmates. Theoretically, it is surprising that percent African American is not significantly related to dominant infractions. A positive relationship could have provided support for a subculture of violence argument. That being said, for the other significant relationships it could still be the case that African Americans are transmitting values of resisting authority and disobeying the rules, which are having a collective impact on inmates regardless of an inmate’s race. The normative climate of such a prison could be one in which committing infractions are acceptable behavior, especially for substance abuse infractions, and a way to act in congruence with climate of the prison. Alternatively, these findings could be due in part to racial discrimination on the part of corrections staff. This means a higher percent of African Americans does not necessarily indicate that a value system is being implemented as much as it means that correctional officers are more likely to write-up inmates for misbehavior in prisons with a higher percent of African American inmates.

The importation measure “percent poor/lower class” is only significantly related to the defiant and evasive infraction types. The strength of this predictor appears to be stronger in the evasive infraction model. From a theoretical perspective it is possible to argue here that the contextual effect of social class is possibly a “subcultural” effect. That is, where there is a higher percent of poor/lower class inmates, they may be transmitting a value system that stresses resistance to authority into the normative climate of a prison, leading to more violent types of infractions directed at corrections staff (defiant) to be committed, regardless of an individual's class (Miller 1958; Cohen 1955).[50] In regard to evasive acts (recall that such acts are non-confrontational and some result in financial gain), it could be that these acts are a result of values placed on evading the rules and trying to gain financial status. These values are enhanced in prisons with a higher percent of poor/lower class inmates affecting the normative climate of a prison leading to more evasive infractions committed by all inmates, regardless of the inmate's social class.

When examining the level-2 social control measure "percent of inmates with more than a high school education", it is seen that this predictor is statistically related to all of the infraction types except evasive infractions. The contextual effect "percent of inmates with more than a high school education" is the least explored in the literature. The present analysis argues that this effect indicates social control is working at the aggregate level. This means that where there is a higher percent of inmates with more than a high school education, there are fewer dominant, defiant, minor uncooperative and substance abuse infractions committed. There are some differences in the strength of the significant relationships to be noted. It appears that the percent with more than a high school education variable has a stronger impact in the dominant and defiant infraction models. This measure is somewhat less strong in the minor uncooperative and substance abuse infraction models. One possible explanation is that these results are similar to that found for education at the

[50] Recall that prisonization theory also proposes that inmates have an anti-staff orientation. That theory argues, however, this is not because the attitude is imported, but because inmates become "prisonized" and take on that orientation.

individual level. Education is more preventive of the more serious infractions than the less serious ones.

Recall that traditional social control theory has generally been applied at the individual level. The current research argues that it can also be applied at the contextual level. The results here indicate that at the contextual level, an increase in the percentage of inmates with more education leads to fewer inmates committing infractions. Where there are more relatively well-educated inmates, there are more inmates committed to conventional society's norms. Where there are more inmates committed to conventional society's norms, there is more control over behavior. This seems to be particularly true in the case of dominant and defiant infractions. Collectively, perhaps the more educated inmates are more committed to conventional society's rules and respect for the rules prohibiting violent behavior amongst inmates. In regard to defiant infractions it could be that, as a whole, inmates perceive that they have too much to lose when defiant infractions are committed (infractions against staff). Also, it is possible that more highly educated inmates are not so quick to take on an anti-staff orientation.

Discussion now turns to the level-2 prisonization measures. The percent of a prison with more than a prior incarceration is statistically related to committing all of the infraction types. However, it appears to be a much stronger predictor within the evasive and substance abuse infraction models than it is for the other three infraction types (dominant, defiant and minor uncooperative). Note that the effect of this variable on committing the different infraction types is consistent with prisonization theory. Prisonization theory would expect a higher percent of inmates with more than a prior incarceration to increase the "pains of imprisonment" for inmates, which would lead to more infractions, in general, regardless of type.

When focusing on dominant infractions from the perspective of the "pains of imprisonment" argument, it seems that institutions with increasing numbers of repeat offenders would be the site of more serious violent infractions committed because the anti-social attitudes and behaviors become more pronounced as inmates serve more time via multiple sentences. In other words, prior incarcerations of inmates have a cumulative impact, perhaps affecting the normative climate of a prison, in which "accepting" dominant infractions as a way of dealing with the confines of imprisonment is normative. In regard to defiant infractions, it could be that inmates housed in a prison with a higher percent of inmates with a prior incarceration are likely to be more "prisonized," meaning they may have adopted attitudes and values in opposition to corrections staff, leading to more defiant infractions committed. When looking at evasive infractions, it could be that inmates with more prior incarcerations are coping with their incarcerations by committing more evasive infractions. Instead of confronting other inmates and staff by committing dominant or defiant infractions as a way to deal with "the pains of imprisonment", evasive infractions are ways to act out in a less conspicuous way.

Finally, when focusing on minor uncooperative and substance abuse infractions, coming from a prisonization standpoint, the normative climate of a prison with a higher percent of inmates with a prior incarceration would be one in which minor uncooperative and substance use infractions may be more prevalent as a way to deal with the shared "pains of imprisonment." Specifically increasing substance abuse seems an acceptable way for inmates to deal with the harsh reality of confinement.

The prisonization measure average time served only has a statistically significant effect on dominant infractions. The relationship between average time served and dominant infractions is positive. From a theoretical interpretation prisonization theory would contend that prisons with inmates who have a higher average of time served would have more infractions committed. This could be a result of socialization within the prison ("prisonization") or frustration felt by inmates who are in prisons where the average time served by all inmates is higher. If committing infractions is seen as a way for inmates to adjust to the prison environment, there may be a socialization process through which inmates are socialized to act out against other inmates as a way of dealing with confinement. According to prisonization theory, this process of adopting antisocial attitudes and behavior would make inmates more "prisonized". It can also be argued that the high values of the average time served measure captures a sense of frustration and aggravation brought on by many inmates who have served more time. The expression of frustration by multiple individuals may have an effect at the collective level of there being more dominant infractions committed, independent of an inmate's own time served and the frustrations associated with that. This specific finding supports the idea that prisonization theory would be more likely to predict inmate-on-inmate infractions because many of the "pains of imprisonment" are due to the presence of other inmates (who threaten each other at times), thus one might expect a prevalence of infractions of inmate-on-inmate violence.

Finally, discussion focuses on the prevalence variables. There are some interesting differences to discuss, however, in general the findings are supportive of the idea that different subcultures evolve within a prison, so that prisons with a high prevalence of certain types of infractions provide a normative climate to encourage more of those same types of infractions (whatever they might be). First, the results show that the prevalence of dominant infractions is statistically related to dominant, minor uncooperative and substance abuse infractions. The effect of this measure on committing a dominant and substance abuse infraction is positive and strong. The effect of this measure on committing a minor uncooperative infraction is negative and comparably a somewhat weaker predictor.

The prevalence of dominant infractions predicting dominant infractions is not a surprising result, as the individual's propensity to commit a dominant infraction should increase where such infractions are more prevalent. It may be that dominant infractions are in a sense "normative" within some contexts. This finding could be interpreted as support for a "prison subculture" where violence is increasingly used by inmates as a way to "get by" within a violent prison. In such an environment, inmates more often resort to violence as a coping mechanism. Stated another way, it may be that dominant infractions breed more dominant infractions.

Interestingly, the effects of prevalence of dominant infractions on substance abuse infractions is the strongest effect overall. This could be because in prisons where the normative climate is violent, substance abuse is necessary as a way to cope with such a hostile environment. The third relationship, between the prevalence of dominant infractions and committing a minor uncooperative infraction, indicates that in contexts where dominant infractions are high, minor uncooperative infractions are less likely to be committed. This finding could be used as support for the idea that in more violent prison contexts, minor infractions are not committed as a way to get by in prison. Instead, more serious infractions are the norm. Or it could be that in violent prisons minor uncooperative infractions are overlooked by corrections staff. Relatively speaking, minor infractions are less serious. If corrections staff have to pick a battle, it would most likely be controlling more harmful behavior.

The prevalence of defiant infractions is related to all of the infraction types, except defiant.[51] It appears the strength of all the effects across the four models is similar; however, the direction of the relationship is not the same for all the infraction types. The prevalence of defiant infractions is only positively related to committing a dominant infraction and is negatively related to committing an evasive, minor uncooperative and substance abuse infraction. The positive relationship between the prevalence of defiant infractions and committing a dominant infraction may shed light on the prison climate. In a prison with a higher prevalence of defiant infractions committed, a normative climate is apparent where individual inmates are more likely to be unruly and resistant to corrections staff. Such unruly and aggressive behavior could carry over to interactions with other inmates (dominant infractions). The negative relationship between prevalence of defiant infractions and committing an evasive, minor uncooperative and substance abuse infraction could mean that in prisons where inmates are less confrontational with the staff (committing defiant infractions), the normative climate encourages non-confrontational acts, such as evasive infractions, acts with less severe punishments, such as minor uncooperative infractions and substance abuse infractions as a way to deal with the "pains of imprisonment". It could be that such a prison is less accepting of serious infractions being committed against staff. The anti-staff orientation may not be as strong.

[51] The absence of the relationship to defiant infractions is interesting considering that one would expect there to be a positive relationship between the two variables. However, this non-existent significant relationship is probably due to the fact that the defiant infraction type is most common and is most likely distributed more evenly across prisons.

The level-2 prevalence of evasive infractions measure is statistically related to committing a defiant, evasive, and minor uncooperative infraction. However, the strength and direction of this effect is different for each infraction type. For instance, the effect of the prevalence of evasive infractions on committing an evasive infraction is the strongest predictor overall in that model (a positive relationship). For the other two relationships, the effect is much weaker within those models. The relationship between the prevalence evasive infractions and committing a defiant infraction is positive and negative for committing a minor uncooperative infraction.

The relationship between the prevalence of evasive infractions and committing an evasive infraction is straightforward. According to prisonization theory, in such prisons the normative climate is one in which inmates are increasingly disobeying the rules in a non-confrontational manner as a way to deal with confinement. The positive relationship between the prevalence of evasive infractions and committing a defiant infraction is not as straightforward. Evasive infractions seem to require a degree of strategy and effort to carry out, and it could be that being caught leads to more defiance against corrections staff because of frustration.

The negative relationship between the prevalence of evasive infractions and committing a minor uncooperative infraction could be due to the more serious nature of evasive infractions. In such prisons where there is a lower prevalence of evasive infractions being committed, it may be that there is less acceptance for serious infractions being committed as a way to deal with confinement and, therefore, minor uncooperative infractions are committed more often. Also, it may be that prison climates vary in degree of overt anti-staff orientation, where evasive infractions are more prevalent. Here, one would expect fewer infractions that are overtly anti-staff, but perhaps only if they are minor infractions.

Finally, the level-2 prevalence of minor uncooperative infractions is statistically related to committing a dominant, defiant and minor uncooperative infraction. This measure is positively related to committing a defiant and minor uncooperative infraction and negatively related to committing a dominant infraction. The relationship between the prevalence of minor uncooperative infraction and committing a minor uncooperative infraction is expected because an individual's propensity to commit a minor uncooperative infraction should increase where such infractions are more prevalent. It may be that minor uncooperative infractions are in some sense "normative" within some contexts. However, it is not the strongest predictor in the model; therefore there are other measures more likely to lead to committing a minor uncooperative infraction than the prevalence of it. The positive relationship between the prevalence of minor uncooperative infractions and committing a defiant infraction is one of the weakest in the model. Both types of infractions are disobedient to corrections staff, although minor uncooperative infractions are less severe. This relationship could be interpreted to mean that in contexts where minor uncooperative infractions are prevalent, anti-staff orientations runs high and there is an increased chance that an inmate will resort to a more serious form of infraction directed at corrections staff.

The negative relationship between prevalence of minor uncooperative infractions and committing a dominant infraction indicates that dominant infractions are less likely to be committed in prisons with a higher prevalence of minor uncooperative infractions. This suggests that aggressive interaction between inmates is not turned to as readily as a way to deal with prison where the normative climate is one of minor uncooperative infractions. If minor uncooperative infractions indicate a degree of anti-staff orientation, in such a context, inmates may feel more cohesiveness and be less likely to turn on each other in violent ways.

From the discussion above it is argued that there are enough differences among the prison-level predictors to further partially validate the typology of infraction behavior. When taking into account all of the measures (level-1, level-2, and cross-level interactions) the results indicate the importance of all three theories discussed above: prisonization, importation, and social control theories in differentiating the types of infraction behavior. It is seen that a few of the prisonization measures (custody level, time served (years) and percent with a prior incarceration) and the importation measure age are consistent predictors of committing the different infraction types; however, this does not mean that a typology of infraction behavior is not needed. In fact, some similarities in the findings are to be expected. The relationship between age and deviance is arguably well established both within and outside of prison (Hirschi and Gottfredson 1983). Therefore, it makes sense that this relationship would exist for all the infraction types. Younger inmates are more likely than older inmates to commit any deviant behavior.

Custody level is also a prominent predictor of committing infractions in the literature. The fact that inmates are assigned to higher custody levels indicates that they pose more of a threat to others and to escape. So again, it is not unexpected that for all the infraction types, inmates housed in higher custody levels would be more likely than inmates housed in lower custody levels to commit any type, or a wide variety, of deviant behavior. Further, note that even though custody level is a consistent predictor of each of the infraction types, this variable interacts with different level-2 predictors across infraction types. The consistent effects of the prisonization measures time served (level-1) and percent with a prior incarceration (level-2) is also expected theoretically. Recall that prisonization theory proposes that inmates will become "prisonized" and commit a range of infractions to cope with prison.[52]

Even in the presence of these consistent predictors of each infraction type, there are also many substantial differences, as discussed above. It is argued that these differences are sufficient to validate, in a preliminary way, having a typology of infraction behavior. Further research, involving other samples of infractions, is necessary to more thoroughly validate the present findings by seeing if the results can be replicated.

In summary, some of the most noteworthy differences across models can be seen when looking at the importation measures. For instance, the importation variable African American (level-1) is not significant in all the models. In the models where African American is statistically related to an infraction type, it is not always in the same direction: positive for dominant and defiant infractions and negative for substance abuse and evasive infractions. Also, the race variable "African American" is not statistically related to committing a minor uncooperative infraction. In the cases when African American is statistically related to committing the other four infraction types the results show that for evasive and substance abuse infractions, whites are more likely to commit such infractions and African Americans are more likely to commit dominant and defiant infractions.

[52] Note that there are a few exceptions to prisonization theory's ideas of versatility. For instance, the theory seems to imply that inmates are motivated to commit more of some types of infractions than others. For example, because of the "anti-staff" orientation of the prison subculture, one might expect that there would be more infractions committed against correctional staff. Also, since prisonization theory posits that many of the "pains of imprisonment" are due to the presence of other inmates (who threaten each other at times) then one might expect a prevalence of infractions of inmate-on-inmate violence. Finally, if different subcultures evolve within a prison, then it would be likely that prisons with a high prevalence of certain types of infractions would provide a normative climate to encourage more of those same types of infractions (whatever they might be).

The importation measure "percent poor/lower class" (level-2) is only predictive of committing a defiant and evasive infraction. Many of the evasive infractions involve activities that would result in financial gain, therefore, it may be that a higher percent of poor/lower class inmates, who are relatively deprived are more likely to commit an evasive infraction. The normative climate of a prison that has a higher percent of poor/lower class inmates might be a ripe environment for committing an evasive infraction. The relationship between percent poor/lower class and defiant infractions could be indicative of a context where inmates are bringing into the prison attitudes and values that are resistant to authority and prison rules.

There are also a few noteworthy differences when examining the social control measures. Both social control measures at the individual-level (married and education) are significant predictors for committing a defiant infraction, but only education level is a significant predictor of committing a dominant infraction. The social control variable "married" is only statistically related to committing a defiant and substance abuse infraction. (All the effects are in the predicted direction). Neither of the social control measures is significantly related to committing an evasive or minor uncooperative infraction. These results indicate that social control may only be important for controlling certain types of infraction behavior, specifically, more serious types of behavior. Also, different types of control (e.g., married vs. education) may be necessary for preventing certain types of behavior. Further research examining how different types of control better prevent different types of misbehavior in prison is necessary.

Finally, there are a few interesting differences when focusing on the prisonization measures. First, custody effects are involved in different cross-level interactions when predicting dominant, defiant, minor uncooperative, and substance abuse infractions. Therefore, although custody is a consistent predictor of all infraction types, it is conditional on different things depending on the infraction type. Second, the prisonization measure "number of prior incarcerations" (level-1) is not statistically related to committing a dominant or minor uncooperative infraction, but is a significant predictor of committing a defiant, evasive and substance abuse infraction. The current research interprets the relationship between number of prior incarcerations and substance abuse to indicate that repeat inmates commit more substance abuse infractions to deal with the "pains of imprisonment". For evasive infractions, it could be that repeat inmates are trying to commit more sneaky acts (evasive infractions), such as unauthorized leave, unauthorized location, or acts that result in financial gain, to try and get by in prison. Finally, in line with prisonization theory, it could be that repeat offenders are more likely to be defiant against correctional staff because tension has increased with prior incarcerations and inmates are more upset with the system. Recall that prisonization theory argues that an anti-staff orientation results from prisonization.

Third, the level-2 prisonization measure "average time served" (level-2), is only a significant predictor of committing a dominant infraction. It makes sense that inmates in prisons with a higher average time served commit more dominant infractions as a way to deal with confinement. With all of the long-timers, tension could run high from living in close quarters and dealing with being deprived of so many things, leading to more violent interactions between inmates (dominant infractions). In fact, it is the non-existent relationship between average time served and the other infraction types which is interesting. According to prisonization theory it would make sense that average time served would predict the other infractions types as well. Further research would be beneficial in trying to understand why average time served predicts dominant infraction types and not others. However, it could be that because dominant infractions are the ultimate in terms of aggression and frustration that a higher average of time served creates an ideal environment for tension and conflict. In this regard it makes sense that average time served would have a positive impact on dominant infractions.

From the HLM logistic regression results it is clear that there is much going on when trying to examine the different predictors of the different infraction types. Although one might argue that there are many similarities in the predictors of the different infraction types, the differences cannot be overlooked. In fact, it is argued here that there are enough important differences to justify breaking infractions into types. Moreover, several of the differences are consistent with both the empirical findings of others and with more general theoretical expectations. In general, the results make sense theoretically. The results show how the three theories –importation, prisonization and social control- come together to better understand the different infraction types. There are even a few instances where level-1 measures interact with level-2 measures of a different theory, indicating the importance of using multiple theories.

Conclusion

The HLM logistic regression results show support for distinguishing types of infraction behavior and offer partial validation of the infraction typology. See Table 7.7 for a tabular summary. This table clearly illustrates the differences and thus points to the need for the typology of infraction behavior.[53] However, as seen in the above discussion not all of the results have an obvious interpretation or are addressed in the literature. Because the infraction types offered are preliminary, more research is needed to see if these differences show up in other research using different samples. However, the preliminary analysis conducted in the present research is the first step in the construct validation process in showing that differences do exist and types of infraction behavior should continue to be differentiated.

[53] It should be noted that this table simply compares the within model differences. It does not indicate statistically significant differences between the models. For example, the table reveals that age is one of the strongest level-1 predictors for both defiant and evasive infractions; however, the table does not indicate for which infraction it is a stronger predictor.

Table 7.7: Summary of HLM Findings for Five Infraction Types

	Dominant	Defiant	Evasive	Minor	Substance
Strongest Level-1 Predictors	Custody Level African American	Custody Level Age	Age Custody Level	Custody Level Time Served	Custody Level African American
Strongest Level-2 Predictors	Prev. of Dominant Infractions % W/ more than a H.S. Educ.	% W/ more than a H.S. Educ. % W/ Prior Incarceration	Prev. of Evasive Infractions % W/ Prior Incarceration	Prev. of Minor Infractions Prev. of Defiant Infractions	Prev. of Dominant Infractions % W/ Prior Incarceration
Strongest Overall Predictors	Custody Level African American	Custody Level Age	Prev. of Evasive Infractions Custody Level	Custody Level Time Served	Prev. of Dominant Infractions Custody Level
Absence of Notable Predictors			Both Level-1 Social Control Measures	Both Level-1 Social Control Measures Level-1 African American Measure	
Other Noteworthy Observations	Level-1 education level is only significant for dominant and defiant	Level-1 Married is only significant for substance and defiant Level-1 education level is only significant for dominant and defiant	Negative Level-1 African American Measure		Negative Level-1 African American Measure Level-1 Married is only significant for substance and defiant

Chapter Eight

Discussion and Conclusion

Introduction

Inmate behavior, specifically how people react or adapt to prison life and what predicts how inmates adapt to prison, is a widely studied area with a long intellectual history (see Clemmer 1940; Irwin and Cressey 1962; Sykes 1958; and Wheeler, 1961 among others). The purpose of the current research has been to examine infraction behavior by creating a typology of infraction behavior and modeling the occurrence of the specific types of infractions, seeking evidence for and against possible infraction specialization. The idea that specialization can be revealed through patterns of different types of offenses has been demonstrated in previous research (Cohen 1986; Smith and Smith 1984). The current research will continue to examine specialization by looking at clusters of infraction behavior.

There were three specific phases of analysis for the current research. First, exploratory factor analysis was conducted to create a typology of infractions. Second, a Markov model was created to examine the extent of infraction specialization. Finally, hierarchical linear modeling (HLM) logistic regression was used to both discover how three theories – prisonization, importation and social control – predict the occurrence of the different infractions types identified in the first phase of the analysis and as well as to help partially validate the infraction typology presented.

Overall, the results from the three phases of analyses provide a degree of support for infraction specialization and the typology of infraction behavior. Construct validity was partially supported by the HLM logistic regression results which show that in general there are different predictors for the different infraction types. These findings also produce some support for specialization. However, it is important to point out that the HLM logistic regression results also support instances of diversity of infraction behavior, particularly when looking at the prisonization predictors of the different infraction types. Specifically, the prisonization measures custody level and time served at the individual-level and percent with a prior incarceration at the contextual- level are consistently significant predictors of the five infraction types. These results suggest that the typology is not as important when predicting the various outcomes. Also, the importation measures age and presenting offense drugs are significantly related to all five infraction types. Again, when focusing on these specific predictors the results suggest that differentiating types of infractions is not necessary. At the same time, when examining other predictors across models, there are results that lead to the conclusion that the typology is distinguishing infraction types in a meaningful way. Those results are described in the discussion below.

When looking at specialization more directly, by use of the Markov model, support for infraction behavior specialization is also somewhat limited. However, even with only limited support for specialization found with the Markov model, the overall goal of the current research -- to predict infraction behavior differentially -- is accomplished. Also, the contribution of the typology of infraction behavior is important. The current research argues that infraction behavior is better understood by using a typology.

Discussion

Researchers and theorists have not agreed on the extent to which offense specialization exists, or even what constitutes offense specialization. It has been claimed in the criminological literature that offenders do not specialize in the criminal behaviors in which they participate (Gottfredson and Hirschi 1990), even though some scholars have found statistical evidence of offenders who recurrently engaged in similar types of offenses (See Blumstein, Cohen, and Farrington 1988; Brennan, Mednick, and John 1989; Britt 1996; Bursik 1980; Lattimore, Visher, and Linster 1994; Piquero et al. 1999; Schwaner 1998; Schwaner 2000). It is worth noting that interest in the topic of specialization is not waning. In fact, two articles focusing on criminal specialization have been recently published in one of the most prominent criminology journals (Deane, Armstrong, and Felson 2005; Sullivan et al. 2006). The current research will continue interest in the topic of specialization.

Infraction typologies are potentially useful when looking at infraction specialization. If inmates or offenders specialize in some forms of behavior, it is useful to have a typology to use to identify what those forms of behavior are. The current research identified five infraction types as a result of considering exploratory factor analysis and some general theoretical concepts: dominant infractions, defiant infractions, evasive infractions, minor uncooperative infractions and substance abuse infractions. The current study utilized two forms of validity to assess the typology offered. The first type of validation used was determining the face validity of the typology. This was established by seeing that the typology of infraction behavior makes logical and meaningful sense and that the typology fell in line with previous typological criminal research. The second type of validation used was construct validity. Construct validity was tested using hierarchical linear modeling (HLM) logistic regression and it was established that there were different predictors of the different infraction types. The current research argues that if the typology of infractions was validated in part by the HLM logistic regression this would lend support to the idea that to some extent offenders seem to specialize in the behaviors that they commit. The current research argues that infraction behavior is better understood by taking a typological approach. Although future research is needed to see if the infraction typology can be replicated, it is offered as a starting point to study infraction behavior.

Hierarchical linear modeling logistic regression was conducted to partially validate the infraction typology. However, it also allowed for testing how prisonization, importation and social control theories predict the occurrence of the different infractions types. These three theories have traditionally played an important role in prison misconduct research. In short, prisonization theory contends that adjustment to prison is dependent on how individuals react to the hardship imposed by the prison experience and context. Prison misbehavior is explained as an adaptation to prison society and confinement (Clemmer 1940). According to prisonization theory, inmates are able to better adapt to prison by creating a subculture that is anti-staff to provide protection for their self-esteem. Importation theory contends that pre-prison experiences, particularly those involving the adoption of criminal values and other personal characteristics affect inmate adjustment to prison. Prison misbehavior is a result of pre-prison experiences and/or personal characteristics supportive of such behavior. Social control theory contends that all individuals are equally motivated to commit delinquent acts out of self-interest and that controls are necessary, such as bonds to conventional society, to keep individuals from misbehaving. In the prison setting, the current research uses social control theory notions to test whether social bonds to conventional society, such as marriage, act as barriers to keep inmates from committing infractions.

The current research can be summarized by some of the more important findings. First, will be a discussion of the main findings yielded from the Markov model. Second, focus will shift to the final stage of the analysis, the HLM logistic regression results.

A Markov model is a model to examine change in behavior over time. In the current research it was specifically used to examine the extent of infraction specialization. Recall that the overriding interest of the current research is whether or not there is a degree of specialization in infraction behavior. The Markov model results revealed three major themes about inmate infraction behavior. The first major theme revealed in the findings is that there is a degree of specialization in prison misconduct. Specialization was most evidently seen when examining dominant infractions. Specialization was also seen to a degree when examining minor uncooperative, defiant, and substance abuse infractions. On the other hand, evasive infractions demonstrated virtually no support for specialization. In sum, the current research does find some support for specialization, but the support is for a moderate degree of specialization in infraction careers, not a high degree of specialization.

The second major theme revealed in the Markov analysis is that infraction behavior is not random. This can be seen when looking at the chance of specialization occurring compared to the average probability of a certain type of infraction being committed. Of the four infraction types where specialization did not have the highest absolute probability of occurring (dominant, evasive, minor uncooperative and substance abuse), the probability of specialization (committing two of the same type of infraction successively) was still higher than the average probability of that infraction being committed, except for defiant and evasive infractions. Without a doubt, infraction behavior is not random, and the second infraction type committed is not independent of the first, except in the case of defiant infractions.

The third major theme revealed in this analysis is an unmistakable trend of inmates moving towards committing evasive infractions. If the first infraction type committed is dominant, minor uncooperative or substance abuse, the probability of the second infraction type committed being evasive is considerably greater than the probability of either specialization (repetition) or advancing on to another infraction type. If the first infraction type is either defiant or evasive, the probability of the second infraction being evasive is second only to the probability of it being defiant, and is still noticeably larger than the probability of it being one of the other three infraction types. This pattern was somewhat unanticipated, but, in hindsight, not necessarily shocking. It makes sense that over time, inmates would move away from committing serious and obvious rule violations and inconsequential noncompliance to evasive infractions (which, by definition, have as their goal not getting caught). Also, evasive infractions seem to represent the midpoint of seriousness, somewhere between the violence of the dominant and defiant infractions and the triviality of the minor uncooperative infractions. Thus, it may be that inmates avoid some of the more serious infractions, perhaps out of fear of further punishments by seeking to indulge in "evasive" infractions. Whether punished for serious or non-serious infractions, the tendency seems to be toward infractions for which there is presumably the (inmate's) perception of a low likelihood of being caught and punished.

The final stage of analysis involved HLM logistic regression analysis. The HLM logistic regression results can be summarized by some of the more important findings. There are six main findings. The first five are organized by the theoretical contributions of importation, prisonization and social control theories in predicting the five infraction types. The last main finding focuses on the different predictors of each infraction type.

The first main finding is that the type of infraction behavior in which an inmate engages is affected by both individual-level (e.g., inmate's race and class) and prison-level (e.g., percent of the prison population that is poor or lower class) characteristics that are imported into the prison by the inmates. This supports the general proposition derived from importation theory that different behaviors have different etiological sources or causes imported into the prison. For instance, the importation variable of race at the individual level has different effects on the different infraction types. The results show that African Americans are more likely to commit dominant and defiant infractions, whites are more likely to commit evasive and substance abuse infractions, and there is no significant relationship between race and committing minor uncooperative infractions. From an importation perspective these findings can be seen as an indication that African Americans and whites have normative differences that are imported into prison and influence infraction behavior.

The results show that the importation predictor measuring social class at the individual level is significant predictor of committing a defiant, evasive and minor uncooperative infraction. Individuals in the poor or lower classes are significantly more likely to commit a defiant, evasive or minor uncooperative infraction than are individuals of a higher class. There is no significant relationship between social class and committing a dominant or substance abuse infraction. The current research interprets these social class findings as representing support for the idea that poor/lower class inmates have a different value system than middle/upper class inmates making it more likely that poor/lower class inmates may commit certain types of infractions. For example, such values as being defiant towards authority could lead to defiant infractions.[54]

[54] Of course, recall that prisonization theory also believes inmates have an anti-staff orientation. That theory argues, however, this is not because the attitude is imported, but because inmates become "prisonized" and take on that orientation.

The prison-level importation measure “percent of the prison that is poor or lower class” is not statistically related to committing a dominant, minor uncooperative or substance abuse infraction, but is a significant predictor of committing a defiant and evasive infraction. Individuals in prisons with a higher percentage of inmates in the poor or lower class are significantly more likely to commit a defiant and evasive infraction than are individuals in prisons with a lower percentage of inmates in the poor or lower class. The current research interprets these social class findings as representing support for the idea that poor/lower class inmates not only have a different value system than middle/upper class inmates, but that the contextual effect of social class is possibly having a “subcultural” effect, making it more likely that inmates in prisons with a high percent of poor/lower class inmates may by more likely to commit certain types of infractions. For example, it is possible that lower class values encompass resisting authority, and this value system may have a collective impact on the prison, increasing the occurrence of defiant infractions.

The results of the analysis of the presenting offense variables also support differentiating infraction types; however, not in the predicted manner. Importation theory leads one to believe that the presenting offense variables would match up statistically with the infraction types, indicating a degree of specialization. Criminal behavior committed outside of prison would be imported into the prison and an inmate would continue committing similar types of behavior. However, the results do not show this. For instance, when examining substance abuse infractions, an inmate with a presenting offense that is serious/non-violent, serious/violent or drug related is less likely to commit such an infraction than an inmate whose presenting offense is moderate/non-violent. The current research argues that these findings could be due in part to the fact that criminal behavior outside of prison does not closely match misbehavior inside of prison. For instance there are many offenses that can be committed outside of prison that cannot be committed within prison and vice versa. In general, these results do not support importation theory.

In sum, these results support the hypothesis that the importation indicators differentially predict the different infraction types. The current research interprets these findings as representing moderate support for the idea that different behaviors have different etiological sources or causes. One exception is when looking at the importation measure age. Age is a consistent predictor of all five infraction types. The current research argues that these results lend support for arguments of the universality of the age-crime relationship. One notable exception to this consistency is seen when examining the cross-level interactions for the defiant infraction type which involves buffering effects of several prison-level measures of the prevalence of various infraction types. Where the various infraction types are more prevalent, age does not result in as large of a decrease in defiant infractions. This means that age is not invariant because the aging effect varies for defiant infractions if a variety of infractions are sufficiently prevalent in the prisons.

The second important finding of the HLM logistic regression analysis is that prisonization characteristics at both the individual- (e.g., custody level) and prison-level (e.g., percent of inmates in the prison with more than one prior incarceration and the average time served of all inmates within a prison) are generally equally predictive of each infraction type. Note that this finding is to some degree expected. Recall, that a basic premise of prisonization theory is that anyone can be “prisonized” and thus commit infractions consistent with the norms of the inmate subculture. Therefore, in regard to specialization, such factors seem to point to a diversity of deviant behavior as a possible response. In general, this theory contends that the prison context is ripe for prison misbehavior and suggests that inmates will engage in a wide variety of offense types. However, as discussed in Chapter Two there are a few exceptions. For instance, the theory seems to imply that inmates are motivated to commit more of some types of infractions than others. For example, because of the "anti-staff" orientation of the prison subculture, one might expect that there would be more infractions committed against correctional staff. Also, since prisonization theory posits that many of the "pains of imprisonment" are due to the presence of other inmates (who threaten each other at times) then one might expect a prevalence of infractions of inmate-on-inmate violence. Finally, if different subcultures evolve within a prison, then it would be likely that prisons with a high prevalence of certain types of infractions would provide a normative climate to encourage more of those same types of infractions (whatever they might be). In regard to these exceptions, the findings from the current analysis are not supportive of the hypothesis that prisonization indicators would better predict infractions committed against correctional staff and inmate-on-inmate infractions (because in general they were equally supportive of all infraction types). Therefore, in general, the findings fall in line with the overall prisonization notion that inmates who are "prisonized" will commit an array of infraction types.

A few interesting findings that point to some differences among the prisonization predictors of the different infraction types are seen when looking at the cross-level interactions involving custody level and time served (both prisonization measures) and some of the aggregate-level variables. One interesting finding is the cross-level interaction between custody level and percent poor/lower class and its effect on dominant infractions. The interaction indicates that more dominant infractions are committed where there are both higher custody levels and more lower class inmates. There appears to be a modestly "explosive" reaction of the two components that results in even more dominant infractions: lower class inmates in high custody environments may feel they have nothing to lose or may subscribe to lower class values of the importance of "physical prowess" and "toughness", resulting in more dominant infractions (inmate-on-inmate infractions).

Also interesting is the cross-level interaction between custody level (level-1) and the aggregate education level variable and its impact on dominant and substance abuse infractions. These findings indicate that custody level lessens the reductive effect of mean education level on dominant and substance abuse infractions. Thus, it appears there are limits to the beneficial effects of more educated inmates – higher custody levels define those limits for some infraction types. It is not clear, however, why those two infractions types are impacted as opposed to the other three (defiant, evasive and minor uncooperative). More research is needed to further explore this area.

One other noteworthy cross-level interaction is between time served (level-1) and average time served at the prison level and its effect on defiant and minor uncooperative infractions. This finding could be attributed to a "relative deprivation" effect. The "long timer" in prisons with relatively many short timers may be prone to defiant and minor deviance -- out of perceptions of personal injustice (relative deprivation) -- whereas the "long timer" in prisons with many other "long timers" is actually disinclined to participate in defiant and minor infractions because serving a long time is "normal".

A third general finding is also relevant to prisonization theory and is supportive of the idea of specialization. As discussed above, prisonization theory leads one to believe if different subcultures evolve within a prison, then it would be likely that prisons with a high prevalence of certain types of infractions would provide a normative climate to encourage more of those same types of infractions (whatever they might be). The results show that in fact an individual inmate's probability of committing a specific type of infraction is enhanced where there is a greater prevalence of the same infraction type committed at the aggregate level. For example, it was expected that a higher rate of dominant infractions would be committed by inmates in prisons where there is a greater prevalence of dominant infractions committed compared to other prisons. This proposition is supported by the current research. The prevalence of dominant, evasive, and minor uncooperative infractions committed at the prison level, each predict their respective counterparts at the individual level. The current research interprets these findings to mean that dominant, minor uncooperative and evasive infractions appear to impact the normative climate of a prison, leading to more infractions of the same kind. Therefore, in general, if a prison has a problem with a certain type of infraction being committed at higher rates than other prisons, it is going to spawn more similar behavior, and such behavior will continue to be a problem. Note, however, when the prevalence of each infraction measure is significantly related to is corresponding infraction type, it is not the strongest predictor, except for evasive infractions. Thus, in most cases several other factors are more important as predictors of each infraction type than the prevalence of them.

The fourth main finding has to do with social control theory. The research shows that inmates who are more bonded to conventional others or institutions are less likely to commit infraction types of a more serious and violent nature (dominant and defiant infractions), then inmates who are less bonded. The two individual-level social control measures, married and education level, are better predictors of the dominant and defiant infraction types than they are of the other three infraction types. Specifically, both social control measures are significant negative predictors for committing a defiant infraction, with those who are unmarried and those with lower levels of education being more likely to commit this type of infraction than are their counterparts. Only education level is a significant predictor of committing a dominant infraction, with less educated inmates being more likely to commit this type of infraction than more educated inmates. Neither of the social control measures is significantly related to committing an evasive or minor uncooperative infraction, which are less serious and violent in nature than dominant and defiant infractions. The current research argues it is possible that these findings are support for the idea that social control is only important for controlling certain types of infraction behavior and also that different types of control (e.g., married vs. education) may be necessary for preventing more serious types of behavior. This implies that in order to better control inmates from committing more serious types of behavior, possibly more could be done to connect inmates to conventional society or keep established bonds intact through education programs and making sure inmates are housed in prisons close to family.

The fifth important finding is also relevant to control theory. There are relatively few dominant, defiant, minor uncooperative and substance abuse infractions being committed in prisons where there is a higher percent of inmates with more than a high school education. The present research argues these findings could possibly be showing social control working at the aggregate level. Where there are more relatively well-educated inmates, there are more inmates committed to conventional society's norms. Where there are more inmates committed to conventional society's norms, there is a greater impact of these "beneficial" values on the context of a prison which could lead to more control over misbehavior. The positive impact of education could potentially be beneficial for correction staff. However, further research on this measure is necessary to more thoroughly validate the present findings by seeing if the results can be replicated.

In sum, the results of the current research are congruent with predictions derived from importation, prisonization and social control theories. This leads to the sixth main finding: different types of infractions were often found to be predicted by different types of predictors and in a manner consistent with some prior research. For instance, dominant infractions are most strongly predicted by custody level and African American (level-1 measures). Inmates in higher custody levels and inmates who are African American are more likely to commit dominant infractions than are their respective counterparts. When examining defiant infractions it is seen that custody level is also a strong predictor, but age is the second strongest predictor. The strongest predictors for evasive infractions are a high prevalence of evasive infractions and age. The strongest predictors of minor uncooperative infractions are custody level and time served. Finally, the strongest predictors for committing a substance abuse infraction are custody level and a higher prevalence of dominant infractions. All of these findings lead the current research to conclude that future models of prison infractions would be improved if types of infraction behaviors are differentiated, rather than lumped together into one outcome category. However, further analysis is necessary to determine if these findings are consistent with other samples. Also, more research needs to be done to say that the typology developed here is the optimal one.

Limitations of the Research

In light of the results of the current research, there are a few limitations that need to be addressed. Note that although these limitations should not be overlooked, it is argued that the results are still valid. Specifically, there are a few methodological limitations that cannot be ignored. The first limitation to be discussed is the problem of using officially collected data. The overwhelming majority of studies on prison adjustment rely on official documentation and records of disciplinary misconduct as a primary data source. Despite the widespread reliance on official reports of disciplinary involvement, the use of these data is neither straightforward or without certain limitations, and it can be argued that prison disciplinary records are imperfect measures of inmate behavior. Perhaps the strongest reason to be skeptical of officially collected data is that it can be subject to bias. There is an unknown, but potentially great, amount of deviant behavior occurring in prison that is hidden from official observation. Poole and Regoli (1980) estimate that only 2.91% of behavior infractions are formally reported. Although this may not be true for the current research, there is undoubtedly a "dark figure" of infractions being committed that is not known. Additionally, correctional officers have a vast amount of discretion in the definition and recognition of events or acts that impact which infractions are recorded. This discretion could greatly impact who and what is formally reported. There may be instances of targeting a particular group or turning a blind eye to other infraction violators. Both of these limitations could greatly impact the results of the current analysis. If infractions are underreported and subjected to correctional staff bias, then there could be more or less infraction specialization than is seen in the current research. For instance, an inmate may be written up for committing a dominant infraction back to back because officers are watching out for that inmate committing dominant infractions. Labeling the inmate as aggressive towards other inmates might increase the chances of the inmate being written up for dominant infractions and other misbehavior might be missed. Despite these limitations, inmate misconduct as measured by official records of disciplinary infractions is still an attractive data source and one that is widely used by researchers. However, because of these limitations the validity of these findings should be interpreted with caution.

Another limitation of the current research has to do with the weaknesses of exploratory factor analysis. It is important to note these weaknesses because exploratory factor analysis was used to create the infraction typology employed in the current research. It has been argued that exploratory factor analysis can generate arbitrary factors (Thompson and Daniel 1996). This limitation, however, was addressed by further testing the validity of the factors identified through hierarchical linear modeling logistic regression. Additionally, although the present study found the infraction typology to be validated, it is questionable whether the same factor structure would emerge if data were gathered from a different sample (i.e., different prisons in different states).

It is also worth pointing out that the prisoners in the current research are not randomly assigned to the prisons in which they are housed. Criteria such as custody level, available bed space, and job or program assignment needs determine where an inmate will be sent to stay. This could potentially affect the validity of the statistics because selection of certain types of inmates into different prisons cannot be entirely accounted for by the measured characteristics in the current study. Future research may want to explore the use of Heckman-type models to better control for the selection processes associated with prison assignment.

A fourth limitation of the current research worth discussing is that specialization over time is defined by examining only two successive infraction events in the Markov model.[55] Recall, that all successive infractions an inmate commits during the sample time frame are studied in the simple Markov model, not just the first two infractions committed. Although most research examining specialization only looks at two successive criminal acts (Britt 1990, 1996; Bursik 1980; Durham 1988; Piquero et al. 1999; Schwaner 1998; Tunnell 1988), there are limitations to this approach, and it is clear that specialization is not fully captured by looking at only two successive acts. It could be that the two successive acts captured are the same, but the third and fourth act are different, or the two successive acts captured are different, but the third and fourth act are the same as the second. In either case, examining more than two infractions would allow a more extensive look at specialization and criminal careers (Of course, the simple Markov model includes all infractions if the offender has committed two or more infractions).

A final limitation is the generalizability of the results. The current research analyzes data on North Carolina prisoners. Although the findings are in general congruence with previous research, there may be problems generalizing these findings to inmates in other states. It could be that North Carolina inmates are different in some ways compared to prisoners in a state that has more crime and a larger prison population leading to different prison dynamics. There is also the fact that different states may have different prison rules and regulations that would make it hard to precisely replicate this study.

[55] Note that the entire infraction career is studied for the factor analysis, and all infractions during a prison "stay" are studied in the HLM analysis.

Conclusion

Despite the limitations discussed above, the current research reveals important information on patterns of infraction behavior and specialization in North Carolina Prisons in 1997. Overall, there is moderate support for infraction specialization. Two major contributions of the current research are studying specialization using a prison population and constructing a typology of infraction behavior. The infraction typology was used to examine infraction behavior, specifically infraction specialization. Limited support for infraction specialization was seen when looking at the Markov Model, especially when looking at dominant infractions (infractions directed at other inmates). The Markov Model further showed that infraction behavior is not random. The second infraction type committed is not independent of the first, even in instances where specialization does not appear to be the case.

Validating the typology of infraction behavior was an important step of the current research. Validation for the typology first came from its empirical basis, the factor analysis. However, because the factor analysis was exploratory, additional validation was necessary. Hierarchical linear modeling (HLM) logistic regression further validated the infraction typology. In general, the HLM logistic regression results indicated that there are different predictors for the different infraction types, supporting the need to distinguish between them.

Research on the specialization of criminal behavior has been fairly consistent for quite some time and interest in the subject continues to prosper. However, little attention is being paid to inmates and whether or not they specialize in misbehavior within prison. This is an important area of study because, if specialization of infraction behavior exists, understanding the behavior pattern serves various utility purposes, such as being able to extend special treatment to specialized offenders and having a greater ability to predict inmate misconduct. The current research yields enough support for the specialization of infraction behavior to continue research in this area with the goal being to more fully understand in which particular instances infraction specialization is occurring and in which particular instances infraction versatility is occurring. Finding specialization of infraction behavior in this population of offenders has the potential to advance our knowledge on specialization in general. Further research, involving other samples of infractions, are necessary to more thoroughly validate the present findings by seeing if the results can be replicated.

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Appendix

Appendix A

Table A.1: HLM models predicting the five infraction types when Level-1 variables are Group-mean centered (n=39,236).

	Dominant Infraction	Defiant Infraction	Evasive Infraction	Minor. Uncoop. Infraction	Substance Infraction
	coefficient	coefficient	coefficient	coefficient	coefficient
Variables					
Individual –Level					
A.A.	.4673***	.2306***	-.1923***	.0524	-.4423***
Poor	.0005	.1434***	.1919***	.1350*	-.0075
Age	-.0298***	-.0423***	-.0485***	-.0298***	-.0279***
PO Violent	-.0081	**-.0991****	-.0542	-.0234	-.1062**
PO Non-Violent	.0092	-.0226	-.0057	-.2454***	-.2488***
PO Drugs	-.2319***	-.2658***	-.3289***	-.3656***	-.3403***
Mar.	-.0581	-.1268***	-.0020	-.0469	-.1636***
Edu.	-.0763***	-.0420***	-.0129	.0362	.0178
Cust.	.6139***	.4327***	.3728***	.3794***	.4874***
N Prior	.0124	.0458***	.0391**	.0065	.0783***
Time	.2070***	.3089***	.1945***	.3800***	.3527***
Prison – Level					
% A.A.	**.0120***	.0158***	.0128**	.0190***	.0098*
% Poor	**.0440****	.0280**	.0352**	.0166	**.0223****
% H.S.	-.2499***	-.1623***	**-.1157*****	-.1047***	-.0939***
% Prior	.0363***	.0197***	.0316***	.0230***	.0485***
Avg Time	.6397*	-.0280	**-.5496***	.2506	**.5826****
Prev. Dom	.0032***	.0004	-.0005	**-.0008**	.0048***
Prev. Defi	**.0008**	**.0013****	-.0013**	-.0013***	-.0022***
Prev. Evas	**.0014****	.0010*	.0033***	-.0009*	.0010
Prev. Min	**-.0012**	**.0003**	.0007	.0023***	**-.0013****

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

Bolded coefficient indicates result is different from model when level-1 variables are grand-mean centered

Appendix B

Table A.2: HLM models predicting the five infraction types when aggregate level infraction types are measured using the percent (n=39,236).[56]

	Dominant Infraction	Defiant Infraction	Evasive Infraction	Minor Uncop. Infraction	Substance Infraction
	Coef.	Coef.	Coef.	Coef.	Coef.
Variables					
Individual –Level					
A.A.	.4896***	.2572***	-.1891***	.0558	-.4190***
Poor	.0038	.1632***	.1953***	.1406**	-.0015
Age	-.0285***	-.0482***	-.0454***	-.0302***	-.0265***
PO Violent	-.0096	-.0664	-.0852	-.0178	-.1024***
PO Non-Violent	.0049	-.0272	-.0096	-.2512***	-.2440***
PO Drugs	-.2830**	-.3445***	-.3800***	-.4096***	-.3554***
Mar.	-.0687	-.1373***	.0028	-.0480	-.1530***
Edu.	-.0784***	-.0440**	-.01139	.0348	.0174
Cust.	.4984***	.4531***	.3815***	.3108***	.5087***
N Prior	.0153	.0552***	.0417**	.0077	.0763***
Time	.2146***	.3246***	.1966***	.3428***	.3547***
Prison – Level					
% A.A.	-.0040	**.0012**	**.0057**	.0121*	.0096*
% Poor	-.0107	**-.0111**	**-.0015**	**-.0241****	-.0153
% H.S.	**-.0127**	**.0048**	.0252	**-.0096**	**.0016**
% Prior	.0146**	**.0072**	.0189***	**.0073**	.0332***
Avg Time	**.3982**	**-.2978***	**-.4356***	-.2552	.3471
% Dom	.0372***	-.0094	-.0046	**.0001**	.1000***
% Defiant	.0312***	**.0329*****	-.0253***	**-.0047**	-.0360***
% Evasive	-.0024	.0084**	.0737***	**-.0015**	.0038
% Minor Uncop.	-.0327***	**.0100**	.0081	.0559***	-.0018

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

Bolded coefficient indicates result is different from model when level-2 infraction types are standardized

[56] The Level-1 variables in all the models are grand-mean centered.

Appendix C

Table A.3: HLM models predicting the five infraction types when Level-1 felony variables are included (n=39,236).[57]

Variables	Dominant Infraction coefficient	Defiant Infraction coefficient	Evasive Infraction coefficient	Minor. Uncoop. Infraction coefficient	Substance Infraction coefficient
Individual –Level					
A.A.	.4693***	.2404***	-.2017***	.0454	-.4475***
Poor	-.0708	.0894**	.1266*	.0496	-.0807*
Age	-.0319***	-.0474***	-.0470***	-.0348***	-.0309***
PO Violent	.0052	-.0708	-.0700	-.0169	-.1052**
PO Non-Violent	.0365	.0067	.0264	-.2080**	-.2120***
PO Drugs	-.2409**	-.2713***	-.3231***	-.3493***	-.3030***
Mar.	-.0616	-.1311***	.0063	-.0407	-.1555***
Edu.	-.0685**	-.0340**	-.0024	.0505	.0294
Cust.	.4241***	.4473***	.3921***	.3519***	.4617***
N Prior	.0409*	.0821***	.0637***	.0506**	.1021***
Time	.2037	.2786***	.1831***	.3155***	.3284***
Prior Felony	-.1409	-.2324***	.0944	-.4516***	-.0273
No Felony Information	.3124***	.2057***	.0560***	.2198**	.3833***
Prison – Level					
% A.A.	.0080	.0077*	.0118**	.0126**	.0142**
% Poor	.0263	.0095	.0160	-.0099	.0002
% H.S.	-.1234***	-.0971***	-.0495**	-.0384**	-.0564**
% Prior	.0263***	.0143**	.0244***	.0107*	.0384***
Avg Time	.1348	-.2527	-.3282	-.2075	.3434
Prev. Dom	.0025***	-.0011	-.0011	-.0014***	.0047***
Prev. Defi	.0016*	.0005	-.0026***	-.0022***	-.0023***
Prev. Evas	.0010	.0005	.0033***	-.0013***	.0004
Prev. Min	-.0010**	.0003	.0003	.0024***	-.0004

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

The variable of interest in the table presented above is the prior felony variable. This variable indicates if an inmate had been arrested for a felony prior to their current incarceration. This information is only available for about one-third of the sample. Because so many inmates were missing this information, a dummy variable was created to see if

[57] The Level-1 variables in all the models are grand-mean centered.

inmates missing this information are missing at random. In other words, two dummy variables were created from the original variable. The first dummy variable, labeled as "Prior Felony" in the table, compares those with a known prior felony against those known to have not had a prior felony. The second dummy variable created, labeled as "No Felony Information" in the table, compares those with missing information on the felony variable against those known to have not had a prior felony. These variables are control variables added to the models to see if the prisonization measures still hold in the face of an inmate's criminal history. The results indicate that the prisonization measures are still significant predictors of the different infraction types, controlling for prior felony. Therefore, it can be argued that the prisonization measures are capturing some aspect of being in prison, above and beyond an inmate's criminal tendencies, leading to the different types of infraction being committed. According to prisonization theory it may be that inmates in higher custody levels, more prior incarceration, and who have served more time are more likely to commit infractions as a way to deal with the "pains of imprisonment" or acting on their anti-staff values obtained by "prisonization". The results further show that inmate's with a prior felony are significantly less likely to commit a defiant and minor uncooperative infraction than inmates without a prior felony. The prior felony measure is not statistically related to committing a dominant, evasive or substance abuse infraction. Interestingly, the "No Felony Information" variable is a significant positive predictor of each of the infraction types. This means that inmates with an unknown or 'missing' felony history are significantly more likely to commit each of the different infraction types than are inmates known to have not had a prior felony. This indicates that inmates missing this information are most likely not missing at random.

Appendix D

Table A.4: HLM: Model with Dependent variable: Infraction versus no infraction committed (n=39,236)

Variables	Coef.	Se	Exp. (Coef.)
Level-1			
Importation			
African American	.0292	.0357	1.030
Poor/Lower Class	.1401***	.0294	1.150
Age	-.0435***	.0028	.9574
Presenting Offense Serious/Violent	-.0454	.0447	.9556
Presenting Offense Serious/Non-Violent	-.1203**	.0398	.8867
Presenting Offense Drugs	-.3757***	.0394	.6868
Social Control			
Married	-.1715***	.0377	.8424
Education Level	-.0492***	.0150	.9520
Prisonization			
Custody Level	.4849***	.0320	1.624
N Prior Incarcerations	.0422***	.0103	1.043
Time Served	.4647***	.0389	1.592
Level-2			
Importation			
Percent African American	.0081**	.0031	1.008
Percent Poor/Lower Class	.0042	.0062	1.004
Social Control			
Percent W/ More Than H.S.	-.0529***	.0113	.9485
Prisonization			
Percent W/ Prior Incarceration	.0086	.0046	1.009
Average Time Served (years)	-.0197	.1766	.9805
Prevalence of Dominant Infractions	-.0005	.0006	.9995
Prevalence of Defiant Infractions	-.0006	.0004	.9994
Prevalence of Evasive Infractions	.0010*	.0004	1.001
Prevalence of Minor Infractions	.0016**	.0006	1.002

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

Appendix E

Table A.5: Individual-level Variables for Inmates with More Than One Infraction (n=6,197)

Variable	Mean	SD	Min	Max
Independent t Variables				
Importation				
African American (0=white, 1=AA)	.69	.46	0	1
Poor/Lower Class (0=Middle/Upper, 1=Poor/Lower)	.87	.34	0	1
Age	28.99	7.97	18	66
Presenting Offense Serious/Violent	.50	.47	0	1
Presenting Offense Serious/Non-Violent	.14	.29	0	1
Presenting Offense Moderate/Non-Violent	.19	.46	0	1
Presenting Offense Drugs	.17	.37	0	1
Social Control				
Married (0=Not Married, 1=Married)	.11	.31	0	1
Education Level (0=0 Thru 8th, 1=Some H.S., 2=Complete H.S., 3= More Than H.S.)	1.25	.76	0	3
Prisonization				
Custody Level (0=minimum 3, 1=minimum 2, (2=minimum 1, 3=medium, 4=close)	2.93	.93	0	4
N Prior Incarcerations (Capped at 6)	1.01	1.48	0	6
Time Served (Years)	.87	1.02	0	14.22

Appendix F

The Variance Components for the Five Infraction Types

Dominant Infractions	**Variance Components**	**Variance Explained**[58]
Null Model		
Intercept	1.629	0%
Level-1 Model		
Intercept	.6212	62%
Custody level	.1231	
Level-1, Level-2 Model		
Intercept	.2900	82%
Custody level	.1377	
Full Model		
(L-1, L-2, Interactions)		
Intercept	.2628	84%
Custody level	.0793	

Defiant Infractions	**Variance Components**	**Variance Explained**
Null Model		
Intercept	.9123	0%
Level-1 Model		
Intercept	.3211	65%
Age	.0003	
Custody level	.0295	
Days served	.0297	
Presenting Off. Serious/Vio.	.1010	
Level-1, Level-2 Model		
Intercept	.1953	78%
Age	.0003	
Custody level	.0315	
Days served	.0291	
Presenting Off. Serious/Vio.	.0895	

[58] The variance explained was calculated by subtracting the variance component for each tested model from the variance component of the Null model and dividing the result by the variance component of the Null model.

Full Model (L-1, L-2, Interactions)		
Intercept	.2031	78%
Age	.0002	
Custody level	.0318	
Days served	.0198	
Presenting Off. Serious/Vio.	.0848	

Evasive Infractions	**Variance Components**	**Variance Explained**
Null Model		
Intercept	.7864	0%
Level-1 Model		
Intercept	.4989	37%
Age	.0002	
Presenting Off. Serious/Vio.	.0391	
Level-1, Level-2 Model		
Intercept	.3798	52%
Age	.0003	
Presenting Off. Serious/Vio.	.0536	
Level-1, Level-2 Model		
Intercept	.1953	75%
Age	.0003	
Presenting Off. Serious/Vio.	.0895	

Minor Uncoop. Infractions	**Variance Components**	**Variance Explained**
Null Model		
Intercept	.2939	0%
Level-1 Model		
Intercept	.1196	59%
Custody level	.0375	
Days served	.0225	
Level-1, Level-2 Model		
Intercept	.0347	88%
Custody level	.0269	
Days served	.0243	
Full Model (L-1, L-2, Interactions)		
Intercept	.0310	89%
Custody level	.0228	
Days served	.0172	

Substance Abuse Infractions	Variance Components	Variance Explained
Null Model		
Intercept	1.143	0%
Level-1 Model		
Intercept	.8104	29%
Custody level	.0820	
Days served	.0529	
Level-1, Level-2 Model		
Intercept	.4243	63%
Custody level	.0751	
Days served	.0499	
Full Model (L-1, L-2, Interactions)		
Intercept	.3977	65%
Custody level	.0662	
Days served	.0340	

Appendix G

Prison Disciplinary Offenses - Infractions

Class A
Taking hostage(s)
Active Rioter
Assault staff w/ weapon
Assault person w/ weapon
Sexual assault
Escape
Detonating explosives
Threat by fire
Assault staff throwing liquids
Fight involving weapons
Attempt A offense

Class B
Weapon possession
High risk act
Lock tampering
Substance Possession
Inhale substance
Provoke assault
Fighting
Interfere w/ staff
Violate NC law
Non-threat fire
Refuse submit drug breath test
Leave quit comm. based program
Attempt B offense

Class C
Misuse medicine
Profane language
Disobey order
Fighting
Unauthorized leave
Verbal threat
Barter/trade/loan money
Self injury
Misuse/unauth-use phone/mail
Bribe staff
Theft of property
Attempt C offense

Class D
Unauthorized location
Negligently perform duties
No threat contraband
Gambling
Bed violation
Illegal clothing
Property tampering
Unauthorized funds
Possession money
Forgery
Create offensive condition
Attempt D Offense

Class E
Unkempt room
Unclean body
Fake illness
Misuse supplies
Legal assistance
Attempt E Offense

Appendix H

Specific Presenting Offenses that make up the Presenting Offense Categories Used in the HLM Analysis.

<u>SERIOUS/VIOLENT:</u>
Assault on Executive/ Legislative Officer; Assault with Deadly Weapon on Executive/ Legislative Officer; Murder 1^{st} Degree; Murder 2nd Degree; Conspiracy/ Solicit to Commit Murder; Manslaughter; Involuntary Manslaughter; Rape and Kindred Offenses; Rape less than Age 12; Rape 1^{st} Degree; Rape 1^{st} Degree Intent to Seriously Injure; Rape 2^{nd} Degree; Assault with Intent to Commit Rape; Sex Offense by Sub Parent; Stat/ Rape/ Sexual Offense 13,14,15 DE>6; Stat/ Rape/ Sexual Offense 13,14,15 DE<6; Sexual Offense 1^{st} Degree; Sexual Offense 1^{st} Degree with Child; Sexual Offense 1^{st} Degree aid/ abet; Sexual Offense 2nd Degree; Statutory Sexual Offense; Assault; Nan-Malicious Castration Maim; Malicious Maiming; Throwing Acid/ Alkaline; Assault Secret Manner; Assault with Deadly Weapon with Intent to Kill or Intent to Seriously Injure; Assault with Deadly Weapon with Intent to Seriously Injure; Assault with Deadly Weapon with Intent to Kill; Assault on Handicapped; Assault with Deadly Weapon with Intent to Seriously Injure Handicapped; Felonious Assault Handicapped; Simple Assault ; Assault On Female; Assault On Child; Assault On Policeman; Assault On Officer/ St Employee; Assault Intent to Seriously Injure; Assault with Deadly Weapon; Assault On Public Official; Assault Pointing Gun; Assault with Deadly Weapon Officer, Fireman, EMT; Assault/ Threat Against Government; Habitual Misdemeanor Assault; Assault w/ Firearm on Law Enforcement Officer; Injury/ Damage w/ Explosive; Injury w/ Explosives; Robbery; Armed Robbery; Robbery w/ Dangerous Weapon; Common Law Robbery; Safecracking/ Safe Robbery; Incest; Bigamy; Peeping Tom; Indecent Liberty w/ Child; Sex Exploit Minor 1^{st} Degree; Fail To Register Sex Offender; Riot and Civil Disorders; Inciting To Riot; Assault Emergency Personnel; Assault with Dangerous Weapon On Emergency Personnel; Child Abuse; Molesting/ Injure Livestock; Solicit To Commit 1^{st} Degree Murder; Death By Vehicle; Death By Vehicle Felony; Death By Vehicle Misdemeanor; Violent Habitual Offender.

<u>SERIOUS/NON-VIOLENT</u>:
Common Law False Imprisonment; Discharge Firearm-Property; Kidnapping 2^{nd} Degree; 2^{nd} Degree Kidnapping Of A Minor; Kidnapping 1^{st} Degree; Abduction Of Children; Felonious Restraint; Damage w/ Explosives; Damage Occupied House w/ Explosives; Breaking And Entering; Breaking And Entering with Intent to Commit Felony; Wrongful Breaking And Entering; Breaking And Entering Vehicles; Breaking And Entering Vending Machines; Bomb Threat; Receiving/ Possessing Firearm; Extortion; Damage To Property; Damage/ Tamper w/ Public Water System; Interfere w/ Tombstone Markers; Profane/ Harassing Language On Telephone; Inmate Possess Weapon; Hostage By Prisoner; Carry Concealed Weapon; Possession Of Weapon On Campus; Communicating Threats; Explosives - Posses/ Sell; Possess Weapon Mass Destruction; Possession Of Firearm By Felon; Enhanced Firearm Penalty.

MODERATE/NON-VIOLENT:
Common Law Burglary; Burglary; Burglary 1st Degree; Burglary 2nd Degree; Breaking Out Of House; Preparation To Commit Burglary; Arson & Burnings; Arson 2nd Degree; Burning Public Building; Burning Education/ School Building; Burn Church, Stable, Barns, Factory; Burn Building Under Construction; Burning Private Property; Fraud; Burning Dwelling; Burning Personal Property; Burning Other Property; Arson 1st Degree; Larceny; Larceny From Person; Larceny By Servant/ Employee; Larceny (Value Over $200); Receiving Stolen Goods; Possessing Stolen Goods; Larceny Of Firearms; Breaking and Entering and Larceny; Larceny And Receiving; Larceny After Breaking and Entering; Shoplifting; Unauthorized Use Of Conveyance; Larceny – General; Embezzlement; Embezzlement – Commercial; Embezzlement-Office/ Employment; Embezzlement Of Taxes By Official; Embezzlement – Charity; False Pretenses & Cheats; Cheat - Property/ Services; Obtain Property-Worthless Checks; Obtain Property-False Coins/ Tokens; Obtain Advance U/ Written Agree; Worthless Check; Worthless Checks Over $2000; Worthless Checks Closed Account; Credit Card Theft; Credit Card Forgery; Credit Card Fraud; Fraud; Common Law Forgery; Forgery; Forgery Of Deeds, Wills; Forgery Certificate Of Stock; Forgery Bank Notes; Uttering Forgery; Selling Forged Securities; Forgery And Uttering; Forgery – Petitions; Falsify School Documents; Trespass; Trespass - Real Property; Cut, Injure Another's Timber; Sell, Buy, Posses Property w/ ID Alter; Trespass After Forbidden; Domestic Criminal Trespass; 2nd Degree Trespass; Conversion By Bailee; Crime Against Nature; Perjury; Offer Bribe To Official; Obstructing Justice; Intimate Jurors; Violation Of Court Order; Resisting Officer; Misconduct Private Office; Escape Prison; Escape Jail By Felon; Contraband To Prisoners; Contributing to the Delinquency of a Minor; Abandonment Of Child Less Than 6 Months; Non-Support; Theft/ Destruction Public Library; Habitual Felon; Felony; Failure To Appear Felony; Accessory/ After/ Fact/ Any Felon; Miscellaneous Motor Vehicle Violation; No Operator's License; Driver's License Revoked; Driving While Disqualified; Violate Vehicle Registration; Fail To Obtain Title/ Registration; Receiving Stolen Vehicle; Tamper With Motor Vehicle; Auto Larceny; Speeding to Elude Arrest; Speeding From Police; Failure To Stop For Accident; Failure To Report An Accident; Miscellaneous Motor Vehicle Violation; Driver's License Permanently Revoked; Hit And Run; Fraud Of Special Identification; Failure To Pay Taxes; Issuing False Bills; Inflicting Wound On Self; Violation Social Services Laws; Fraud Misrepresent Food Stamp Amount; Health Law Violation; Other Felon; Other Misdemeanor; Conspiracy; Criminal Contempt; Failure To Appear; Employ Sec Violation.

DRUGS:
Possess/ Purchase Wine Beverage By < 21 Age; Manufacture Liquor; Transport Liquor; Liquor – Minors; Consume Malt Beverage Pass Area; Violate Regulate Control Substance; Manufacture Control Substance; Sell Control Substance; Possess With Intent to Sell Control Substance; Possess Control Substance; Drug Paraphernalia - Use/ Possess; Trafficking Controlled Substance; Create, Sell, Deliver Controlled Substance; Manufacture Schedule I; Sell Schedule I; Possess With Intent to Sell Schedule I; Possess Schedule I; Trafficking Schedule I; Manufacture Schedule II; Sell Schedule II; Possess With Intent to Sell Schedule II; Possess Schedule II; Trafficking Schedule II; Trafficking In Methamphetamine; Sell

Schedule III; Possess With Intent to Sell Schedule III; Possess Schedule III; Trafficking Schedule III: Trafficking In Lysergic Acid; Manufacture Schedule IV; Sell Schedule IV; Possess With Intent to Sell Schedule IV; Possess Schedule IV; Manufacture Schedule VI; Sell Schedule VI; Possess With Intent to Sell Schedule VI; Possess Schedule VI; Trafficking Schedule VI; Violation Drug Laws; Maintain Any Place Controlled Substance; Inhale Fumes For Intoxication; Traffic Opium/ Heroin 28 Grams; Traffic Opium/ Heroin 14-27 Grams; Traffic Opium/ Heroin 4-13 Grams; Traffic Marijuana 100-1999 Lb; Traffic Marijuana 50-99 Lbs; Traffic Cocaine 400 Grams / >; Traffic Cocaine 200-399 Grams; Traffic Cocaine 28-199 Grams; Traffic Cocaine 14-27 Grams; Sell/ Distribute Controlled Substance On School Property; Violation Controlled Substance Penal Institution; Employ Minor Drug Violation; Sell/ Distribute Controlled Substance Person 18 To Under 16; DWI Level 1; DWI Level 2; DWI Level 3; DWI Level 4; DWI Level 5; DWI Driving While Impaired; Habitual Impaired Driving; Transport Open Container of Alcohol.