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INDIVIDUAL AND INSTITUTIONAL DEMOGRAPHIC AND ORGANIZATIONAL CLIMATE CORRELATES OF PERCEIVED DANGER AMONG FEDERAL CORRECTIONAL OFFICERS

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ABSTRACT

Individual and Institutional Demographic and Organizational Climate Correlates of
Perceived Danger Among Federal Correctional Officers
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Doctor of Philosophy
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Correctional work is dangerous due to the volatile and often unpredictable environment in which individuals work. Although studied extensively in the policing literature, perceived danger has received far less empirical attention as an outcome in studies of correctional officers.

The current work sought to extend earlier work in corrections by: learning whether views on this outcome varied across institutions; observing if specific factors proved relevant at both the officer and institutional levels; and learning, if a variable was relevant at both levels, if the direction and strength of its impact was similar across levels. Using a conceptual framework similar to that for studying fear of crime among residential populations, the current work sought to gauge the influence of the described predictors after controlling for perceptions of the risk of inmate assault.

Multilevel models were applied to data from the 2001 to 2005 Federal Bureau of Prisons *Prison Social Climate Survey* administered yearly to all categories of correctional personnel in 114 institutions. These analyses used surveys from correctional officers (total n = 2,954; minimum n / year = 492) in 106 institutions.

Results showed significant variation across institutions in average perceived danger. Demographic composition of officers mattered, as did their average views about different aspects of social climate, and their average perceptions of assault risk. After

controlling for all these factors, significant between-institution differences on average perceived danger remained. Several demographic variables influenced perceived danger in ways that paralleled the fear of crime literature. Female, African-American, and Hispanic officers perceived more danger. Two features of perceived organizational climate were associated with less perceived danger. These impacts persisted after controlling for job stress and dissatisfaction at the respective levels.

Results confirmed that individual differences in perceived danger strongly linked to both race and gender, even after controlling for job stress and dissatisfaction. Impacts of racial composition at the institutional level parallel impacts of individual officer race, demonstrating for the first time in the corrections literature such multilevel impacts of officer race and racial composition on perceived danger. The direction of officer gender impacts, however, varied depending on the level of analysis.

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herein are solely the authors and do not reflect the opinions or official policies of NIJ,

DOJ, or Temple University.

DEDICATION

This dissertation is dedicated to my grandmother, Lillian Bernell Flores, one of

the most beautiful women I have ever known. Her love and kindness I carry with me still.

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CHAPTER 1

INTRODUCTION

This study examined perceptions of danger among Federal correctional officers. As a group, correctional officers face daily threats of danger and violence caused by tensions related to overcrowding, and overall volatile prison conditions. For this reason, correctional work has often been characterized as one of the "toughest positions in law enforcement" (Gillan, 2001, p. 112).

Correctional officers report varying levels of job satisfaction, high levels of stress, and demonstrate high rates of attrition. According to the American Correctional Association (ACA), the average turnover or attrition rate in 2005 was 16.2% (ACA, 2005). Studies have shown job stress and dissatisfaction contribute to employee turnover (Camp, 1994; Dowden & Tellier, 2004). Research has shown that perceived danger contributes to high levels of stress and dissatisfaction (Dowden & Tellier, 2004; Lambert, Hogan, & Barton, 2002) The conceptual model developed in this study to predict officers' perceived danger, therefore was guided by research in job satisfaction and stress.

To date, perceived danger has been investigated as an outcome in corrections in only a small number of studies. The current work seeks to extend that earlier work in the following specific ways: (a) the examination of multilevel impacts of individual-level characteristics, specifically gender and race/ethnicity, on perceived danger, and (b) the examination of organizational climate indicators and their impact on perceived danger at the individual and institutional level.

Perceived danger has implications for better understanding and managing job stress, dissatisfaction, and turnover. Further, there may be practices relevant to behavioral outcomes which relate more directly to perceived danger. Perceived danger may have a range of effects on correctional officers while on the job: high levels may encourage caution or aggression toward prisoners; low levels may lead to incautious behavior. A lax work style that does not take precautions, though comfortable for the officer, may endanger other co-workers and leave staff members vulnerable to dangerous situations.

Perceived danger may lead to officers reacting aggressively toward co-workers as well as inmates. Such reactions may lead to unstable prison environments with high turnover rates among officers and unhealthy working conditions for staff and inmates. If prison administrators can better understand the causes and consequences of perceived danger, it may help reduce aggressive behavior among staff, between staff and inmates, or turnover rates. It may help prison administrators more effectively encourage positive work behaviors and attitudes among staff.

Past research on correctional officers' job satisfaction and stress has examined the influence of demographic characteristics and organizational factors. The present study adopted a roughly similar model to examine perceived danger, but also included an indicator of risk, i.e., perceived assaults. Further, some models also controlled for stress and dissatisfaction.

Key to the present analysis was the disentangling of individual and institutional impacts. Data from the Federal Bureau of Prisons were used. These data allowed the examination of a large number of institutions, thus better allowing the separation of individual and organizational impacts.

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What is known about perceived danger among correctional officers is limited in three important ways. First, research has yet to simultaneously examine the effects of prison organizational climate factors on correctional officers' perceived danger simultaneously at both the individual and institutional levels. These connections seem likely since organizational climate contributes to workplace stress and job satisfaction, and the latter two have been associated with perceived safety among officers (Armstrong & Griffin, 2004).

Second, perceived danger has typically been used as a predictor of stress and job satisfaction (Britton, 1997b; Cullen, Link, Wolfe, & Frank, 1985; Dowden & Tellier, 2004). On its own, however, perceived danger has been the outcome of interest in only one empirical study (Wright & Saylor, 1991). That study was limited since it failed to separate institutional and officer impacts. In addition, that study did not concentrate solely on correctional officers but included all correctional personnel. To the best of the author's knowledge, there is no published study to date predicting perceived danger solely among correctional officers and using a large number of institutions.

Third, in earlier studies perceived danger was operationalized in a limited way. Cullen et al.'s (1983) five statements on dangerousness, as shown in Table 1, have been used in all published studies with correctional officers save one (see Cullen, Link, Wolfe, & Frank, 1985; see Triplett, Mullings, & Scarborough, 1996). It would seem important to see how perceived danger relates to key predictors using an alternate indicator.

In sum, the current study sought to advance previous research by examining correlates of correctional officers' perceived danger taking both individual and institutional factors into account. The results may lead to a better understanding of how

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specific organizational and demographic factors relate at multiple levels to perceived danger.

Table 1. Cullen et al.'s (1983) Indicators of Danger

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1. "A lot of people I work with get physically injured in the line of duty,"

2. "I work at a dangerous job,"

3. "My job is a lot more dangerous than other kinds of jobs,"

4. "There is really not much chance of getting hurt in my job," and

5. "In my job, a person stands a good chance of getting hurt."

Response categories include:
   Very Strongly Disagree / Strongly Disagree / Disagree /
   Agree / Strongly Agree / Very Strongly Agree.

Note. Item 4 was reverse coded.

CHAPTER 2

RELEVANT LITERATURE

This chapter presents an overview of recent changes in the volume and gender composition of the correctional workforce. It then details work on the dependent variable, perceived danger, as well as related outcomes including job satisfaction and job stress among correctional officers. The discussion considers the dual role of perceived danger as a dependent variable and as a predictor of job satisfaction and stress. Brief comments on these outcomes from the policing literature appear when applicable. A discussion of how the outcomes relate to and differ from one another follows, as well as observations on general theoretical limitations of the work to date.

An Overview of Correctional Officers and Their Setting

The steady growth of inmates incarcerated in both state and Federal facilities has led to an increasing number of employed correctional officers. In 2004, the nation's prisons and jails incarcerated over 2.2 million prisoners (ACA, 2004; Harrison & Beck, 2005, p. p. 23), as compared to 680,907 prisoners in 1989 (BJS, 1990). Table 2 shows the corresponding changes in the number of correctional officers at the state and Federal levels. As the volume of correctional officers has grown, so too has the number of women officers.

Table 2. Growth in Correctional Officers

Year	Number of Correctional Officers	Number of Female Correctional Officers	% Female
1989	141,129	22,161	15.70
1990	159,247	26,539	16.67
1991	163,343	27,606	16.90
1992	166,933	28,051	16.80
1993	179,958	30,197	16.78
1994	192,674	34,197	17.75
1995*	200,081	36,285	18.12
1996	207,488	38,172	18.40
1997	209,468	40,409	19.29
1998	210,205	44,890	21.36
1999*	216,276	48,189	22.28
2000*	222,348	50,616	22.76
2001*	228,419	53,043	23.22
2002	234,490	55,470	23.66

Note. (*) Data interpolated by author.
Data Source: American Correctional Association, *Correctional Officers in Adult Systems* (fax communication, 13 October 2006).

According to the Sourcebook of Criminal Justice Statistics (2005), in 1981 there were fewer than 5,000 women working as correctional officers. By 1995, this number increased to 36,000. The number of female correctional employees further increased 41% between 1995 and 2000. As of 2002, there were over 55,000 female correctional officers. Of course beyond the correctional officers themselves, there are also large numbers of additional staff.

The increasing number of women correctional officers has been fueled in part by the passage of legislation such as Title VII of the 1964 Civil Rights Act and the Supreme Court case, *Dothard v. Rawlinson* (1977). Women were granted full access to all employment opportunities within both male and female correctional facilities.

Typical officers are white, non-Hispanic males between the ages of 25 and 44. Gender and race composition varies across states. The average officer has more than a high school education. It has become increasingly common for officers to enter corrections with some college although they may not have completed college (ACA, 2004).

Prison work has low visibility. It is physically and socially hidden from the public except when there are riots or breakouts. Therefore, the public does not value correctional workers (Crawley, 2004; Lombardo, 1981). Ethnographic accounts (see Crawley, 2004; Kauffman, 1988) have suggested that officers view their work as misunderstood by the public. They are jobs of last resort (Britton, 2003) and for aspiring police officers who didn't make it (Britton, 1997a).

As a working class group in the criminal justice system, correctional officers are loyal to their co-workers (Crawley, 2004). Given a perceived lack of public support, high

levels of stress, and threats of potential violence in the work environment, bonds of solidarity, in the form of co-worker support, are important.

Officers are involved in every element of an inmate's life (Britton, 2003). This makes correctional facilities, for the inmates, total institutions. Total institutions are defined as "a place of residence and work where a large number of like-situated individuals, cut off from the wider society for an appreciable period of time, together lead an enclosed, formally administered round of life" (Goffman, 1961, p. xiii). The relationship between officers and inmates has been characterized as one of 'the keeper' or 'turnkey' and 'the kept' (Britton, 2003; Gillan, 2001; Lombardo, 1981; Paoline, Lambert, & Hogan, 2006). Correctional officers are in charge of all that occurs on their shift. As 'front line' staff, correctional officers enforce guidelines against inappropriate inmate behavior; maintain control over the inmate population to prevent escape (Zimmer, 1996); use various techniques such as threats of isolation, revocation of privileges, formal punishment, physical force, and ignoring minor infractions to gain inmate compliance; implement policy (Freeman, 1997; Kifer, Hemmens, & Stohr, 2003); and create and maintain the institutional environment (Farkas, 1999).

As described, correctional officers have great power and discretion over an inmate's environment. Classic simulated research experiments, for example, Zimbardo's 1971 Stanford Prison Experiment (SPE), have examined the behavioral and psychological consequences of being a prisoner or guard. Over the course of the SPE, those assigned to the guard role began to act increasingly aggressive while the prisoners were docile and seemed to lose all sense of identity. For all involved, the mock prison became real. Zimbardo acknowledged the "power of situations to overwhelm individual

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dispositions and even to degrade the quality of human nature", in other words, certain situations can display the "evil that good people can do to other good people" (Zimbardo, Maslach, & Haney, 2000, p. 194).

Zimbardo's situationist interpretation of the Stanford Prison Experiment continued to be widely accepted for decades. Recently, however, Carnahan and McFarland (2007) revisited the issue and suggested that self-selection, rather than the power of a given situation, was crucial for understanding how guards interpreted their roles arguing that "those who self-select for any situation are likely attuned to its permitted behaviors and requirements, and they often reinforce one another in the direction of their common inclinations" (Carnahan & McFarland, 2007, p. 604).

Self-selection may be one reason why certain individuals are drawn to the field of corrections. This has important implications for the present study. The reason individuals enter the profession of corrections may influence their perceptions of danger. For instance, certain individuals may be drawn to corrections for economic and/or human service reasons. On the other hand, the job may attract those who enjoy the potential for violence and the opportunity to use force against others. The latter group may be less likely to report high perceptions of danger. If officers report low levels of danger, this may be due to their personality, not their actual risk of danger on the job.

The following discussion presents an overview of research in perceived danger, job satisfaction, job stress, and co-worker support. A heuristic will serve as an orienting framework for approaching the literature in the field and for placing perceived danger in a broader context (see Figure 1). Solid lines represent relationships that have been examined. Dashed lines represent relationships that have not been examined.
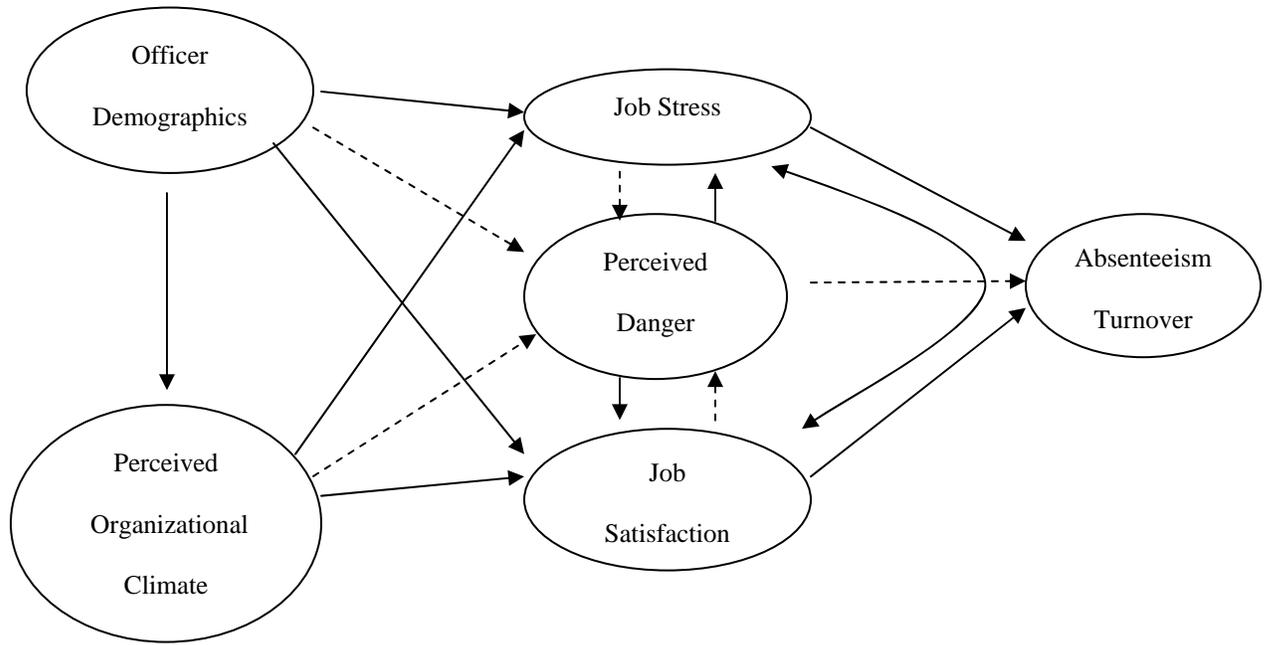
Figure 1. Orienting Framework for Research to Date

To date, corrections research has examined the impact of demographic characteristics and perceived organizational climate on job satisfaction and job stress as well as the impact of satisfaction and stress on turnover and absenteeism. As indicated by dashed lines, research has not examined the impact of officer characteristics and perceived organizational climate on perceived danger (see Figure 1).

As shown in the conceptual model, perceived danger is conceptually central to several important outcomes. The model presents the idea that job satisfaction and stress may be important predictors of perceived danger. Perceived danger, in turn, may connect to absenteeism and turnover.

As mentioned, there remains a lack of research on perceived danger. It is unclear which demographic variables and organizational level indicators relate to perceptions of danger. For this reason, the present study will be guided by findings in the areas of job

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satisfaction and stress, both of which have received an enormous amount of empirical attention.

The following discussion highlights research findings in job satisfaction, stress, and perceived danger. Given the associations between perceived danger, stress, and job satisfaction, this work was relevant to the current study.

<div align="center">Relevant Empirical Outcomes</div>

Job Satisfaction

Although no single agreed upon definition of job satisfaction exists, a fairly typical definition is given by Lambert et al. (2002) who state job satisfaction is a "subjective, individual-level feeling reflecting whether a person's needs are or are not being met by a particular job" (p. 117). Like the definition, how job satisfaction is measured also has varied. A majority of studies on job satisfaction have used self-report questionnaire data as well as indices created to tap specific areas of job satisfaction, including satisfaction with advancement opportunities, current salary, and variety and autonomy of correctional work.

A recent meta-analysis suggested that job satisfaction has received more attention than other feelings, attitudes and behaviors studied among correctional officers (Lambert, Hogan, & Barton, 2002). High levels of correctional job satisfaction have been linked to decreased levels of job-related stress, positive attitudes toward co-workers and supervisors, and increased support for rehabilitation as a correctional goal for prisoners (Griffin, 2001; Lambert, Hogan, & Barton, 2002). These factors may be important to correctional administrators interested in curbing turnover and absentee rates among correctional officers.

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Research on job satisfaction in policing has also garnered much attention (Zhao, Thurman, & He, 1999). That work on policing has shown older, more motivated police officers reported more satisfaction and an increased willingness to interact with the public (Greene, 1989). In addition, officers employed in policing agencies which place on emphasis on community-oriented policing report more job satisfaction (Brody, DeMarco, & Lovrich, 2002). Minority officers, specifically African-Americans, report feeling more criticized at work which leads to low job satisfaction (Bowler, 2005). Officers reporting more work-family conflict report low levels of job satisfaction (Howard, Donofrio, & Boles, 2004).

Job Stress

Stress has been conceptualized as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). Job stressors create job stress, a topic explored for both correctional officers and police officers (Anshel, 2000; Brough & Williams, 2007; Morgan, Van Haveren, & Pearson, 2002; Triplett, Mullings, & Scarborough, 1996; Wexler & Logan, 1983). Studies have considered the spillover effects of work-home conflict, the effect of stress on physical and mental health, and the social dimensions of stress. The individual responses to stressors can be behavioral (e.g., absenteeism) physical (e.g., high blood pressure) or psychological (e.g., cynicism) (Brough & Williams, 2007; Carlson, Anson, & Thomas, 2003; Huckabee, 1992; Paoline, Lambert, & Hogan, 2006; Schaufeli & Peeters, 2000).

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For correctional officers institutional causes of stress may include facility overcrowding, longer sentences served by inmates, more offenders with mental health issues, and a negative public image of correctional officers (Brough & Williams, 2007).

Job stress worries correctional administrators because it found to relate to employee absenteeism and turnover rates (Finn, 1998; Morgan, Van Haveren, & Pearson, 2002). Increased turnover rates among staff have contributed to continued hiring by administrators, misuse of funds, decreased levels of staff morale (Paoline, Lambert, & Hogan, 2006) and high training costs. A recent study of Australian correctional officers reported that correctional officers submitted the highest number of stress claims per 1,000 employees of any occupational group (Brough & Williams, 2007).

Outcome of Interest: Perceived Danger

Danger is part of the prison environment. Numerous studies have found that many correctional officers believe physical danger is an ever-present possibility (Crawley, 2004; Cullen, Link, Wolfe, & Frank, 1985; Kauffman, 1988; Lombardo, 1981; Owen, 1988; Wright & Saylor, 1991). According to the 2000 Census of State and Federal Facilities, there were 34,000 reported inmate-on-inmate physical and sexual assaults, and 18,000 inmate-on-staff assaults (Stephan & Karberg, 2003). In addition, in the 12 months preceding the Census, 53 inmates and 5 staff died from assaults. During 1992 to 1996, correctional officers experienced 217.8 nonfatal workplace assaults per 1,000 officers (Warchol, 1998). This rate was second only to police officers who experienced 306 nonfatal assaults per 1,000 officers.

Policing is perhaps better known as a dangerous profession. Cullen et al. (1983) suggest "what makes being a police officer dangerous is not so much that a person is

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constantly subject to physical harm, but rather that the potential for injury is a reality that all officers must confront"(p. 460). That same potential is part of correctional officers' work.

Some research in corrections has examined perceived risks of physical and sexual assaults among prisoners (Cullen, Link, Wolfe, & Frank, 1985; Jacobs, 1978). Contributing to the stress and danger to correctional officer job is their responsibility for managing and protecting inmates. In prisons, there are high rates on inmates-on-inmate assaults including sexual assaults. In 2006, there were 3.75 alleged inmate-on-inmate sexual assaults per 1,000 inmates in public run state prisons. Only .43 per 1,000 sexual assaults, however, were substantiated (Beck, Harrison, & Adams, 2007). These rates are driven by younger prisoners and longer sentences.

It also appears that these rates are driven by institutional factors. A study by Camp et al. (2003) found that violent inmate misconduct varied by institution. Violent misconduct was also associated with average custody level. Institutions with higher security levels reported significantly more violent inmate misconduct. Young inmates, individuals with previous misconduct, and those with Mexican citizenship were more likely to be involved in violent misconduct (Camp, Gaes, Langan, & Saylor, 2003).

The latter findings suggest that if rates of misconduct vary by institution, it can be expected that perceptions of danger will vary by institution as well. If custody level helps drive perceptions of danger (see Camp et al., 2003), this variable would help in examining perceptions of danger across institutions. In addition to institutional security level, several other institutional variables may relate to perceived danger, for example, institutional overcrowding, increased volume of short-term inmates, and prisons

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operating for less than a year. These variables, however, were not made available for the current study. Correctional officers working in overcrowded institutions may report more perceived danger because they will be outnumbered and less likely to quell violent incidents. Institutions with a high volume of short-term inmates may report more incidences of misconduct because they are more likely than long-term inmates to be involved in more disciplinary infractions (Acevedo-Casey & Bakken, 2001). Violent misconduct in prisons appears more likely among younger prisoners and those with shorter sentences (Cunningham, 2006). Officers working in these institutions may report more perceived risk. Correctional officers working in facilities operating for less than one year may report more perceived danger. These facilities are more likely to employ officers with little experience which will lead to increased perceptions of danger.

Perceived danger among correctional officers has been found to associate with two important outcomes: stress and job satisfaction. In their meta-analysis of 20 studies of predictors of work-related stress among correctional officers, Dowden and Tellier (2004) reported that problems specific to correctional work, including perceived danger, and role difficulties and role conflict, were strong predictors of work-related stress, performing better than demographic variables.

Correctional officers' orientation matters also. Individuals who support custody and/or punitive measures reported more stress, and those favoring rehabilitation reported less (Cullen, Lutze, Link, & Wolfe, 1989; Farkas, 1999; Kifer, Hemmens, & Stohr, 2003; Whitehead & Lindquist, 1989).

An example of one study using danger to predict stress was a study of 155 correctional officers in a southern correctional system. (No indication was given about

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the number of institutions from which officers were drawn.) Cullen et al. (1985) examined danger as a predictor of multiple types of stress including work stress, job dissatisfaction and life-stress (see Table 1). Perceived danger significantly contributed to all three measures of stress. The authors argued that although a majority of their sample had not been actually assaulted while on the job, it was the ever-present possibility that drove perceptions of danger thus creating stress (Cullen, Link, Wolfe, & Frank, 1985).

Dissatisfaction and stress vary by gender. Using data from the 1988 Prison Social Climate Survey, Wright and Saylor (1991) examined perceptions of prison work among 3,325 BOP staff --correctional officers and other workers-- across 46 institutions. The sample was 21.9% female and 10.6% African-American. Survey items asked about the safety of staff members, the likelihood of physical assault, satisfaction with job supervision and work with inmates, and job-related stress. Males and females experienced the work environment in similar ways, for example, they did not differ in their feelings with regard to feelings of efficacy in working with inmates. Males and females differed, however, in reported stress with women reporting greater levels of job-related stress (Wright & Saylor, 1991).

In addition, females perceived assaults as less likely even though males and females viewed women staff as more vulnerable to assaults than males (Wright & Saylor, 1991). Overall, female staff reported feeling less safe. This last finding would seem to contradict females' lower estimates of assault (see also Triplett et al., 1999). Despite the confusing gender-danger links in this study, Wright and Saylor (1991) found perceived danger did predict work-related stress.

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This was the only sizable single study to date looking at predictors of danger. Some limitations merit mention. First, it failed to separate individual and institutional factors. Between-institution and between-staff covariation were confounded. Second, though an interaction effect examined the effect of gender and custody position on job-related stress and efficacy, separate analyses were not run for correctional officers. All correctional staff were analyzed jointly.

Wright and Saylor's (1991) finding that women staff members viewed prisons as safer than men do --even though they thought themselves more likely to be assaulted-- supports the notion that male and female staff members may experience the work environment differently. Many factors might contribute to the differences.

Differences in how men and women experience the workplace may be due in part to sexual harassment by inmates and fellow staff and the resistance to women in corrections. Britton (1997) suggested that policies and practices created by corrections administrators were shaped by masculinity, creating advantages for male correctional officers. Using training as an example, she argued that the gaps between training and actual job challenges, as well as men's objections to women in a male-dominated occupation help explain why women would experience the institution differently. Training scenarios focus on male inmates and male officers and tend to overemphasize threats of violence and war stories. Training promotes the idea that working in the prison environment requires physical toughness and aggressiveness, qualities women were thought to lack. The inequality by gender of training scenarios may further contribute to gender differences in work experiences (Britton, 1997a). In addition, the bulk of correctional officers are male, leaving women to feel isolated and unprotected. This

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encourages the continued resistance to women in corrections (Britton, 1997a; Martin & Jurik, 1996).

Perceived danger can affect officers' lives off the job. Triplett et al. (1996) report that safety concerns were an important source of stress for correctional officers and contributed to work-home conflict (see also Dowden & Tellier, 2004; see also Finn, 1998; Gillan, 2001). Women are more likely than men to report work-home conflict (Hochschild, 1989, , 1997). This conflict often leads to increased levels of stress among women which may leave them vulnerable at work.

The current study explored possible gender differences in perceived danger. Given limitations of the current study, the processes underlying possible differences cannot be clarified although the factors potentially relevant, described later, may serve as a guide to future research efforts.

Personal Characteristics and Individual-level Attributes

The following sections consider how well various demographic factors predict outcomes defined above.

Gender

As a predictor of job satisfaction, gender has produced inconsistent results. Some studies find women correctional officers report greater job satisfaction (Camp & Steiger, 1995; Griffin, 2001; Lambert, Hogan, & Barton, 2002; Rogers, 1991). Some find no difference between men and women (Griffin, 2001; Lambert, 2004; Stohr, Mays, Lovrich, & Gallegos, 1996).

If however, impacts of gender on satisfaction are mediated by work-related attitudes (see Jurik & Halemba, 1984), and studies differ in the extent to which they

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include these, this might help explain cross study discrepancies. Further, since studies vary in the number, location, and security level of institutions examined, and these factors are sometimes not separated out, this too might explain why the discrepancies appear.

Similar to the job satisfaction literature, the effects of gender on job stress have been found to vary. In six studies of job stress among correctional officers, two found that females reported more job stress than males (see Brough & Williams, 2007; Cullen, Link, Wolfe, & Frank, 1985; see Dowden & Tellier, 2004). Four reported no relationship between gender and job stress. The few studies that have found sizable gender effects have found that males were less likely to report high levels of stress while women were more likely to report greater work/home conflict (Cullen, Link, Wolfe, & Frank, 1985; Triplett, Mullings, & Scarborough, 1996).

Having a career outside the home is inhibiting for some women because the rules of the work force are created to suit the male population (Hochschild, 1989). Hochschild (1989) suggested that a woman's gender ideology determines what sphere, work or home, she identifies with more. Women who engage in child-care and housework responsibilities after work, or the "second shift," work an extra month a year. This leads to stress, burnout, fatigue, sickness, and emotional exhaustion. More women in the workforce outside the home has been accompanied by more work-home conflict.

The work-home conflict faced by women workers would seem to imply, all else equal, that women correctional officers are more stressed by their job and less satisfied with it.

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Race

Some studies have suggested that no significant relationship exists between race and job satisfaction (see Hepburn & Knepper, 1993; see Jurik & Winn, 1987; Lambert, 2004; Wright & Saylor, 1992). Other studies, however, have reported a direct effect of race on job satisfaction. For example, minorities, specifically African-Americans, report lower levels of job satisfaction.

Perhaps the effects of race on job satisfaction are conditioned by opportunities for advancement (Rogers, 1991). When compared to whites, African-American correctional officers reported fewer opportunities for advancement and less social support; this perception was related to lower levels of job satisfaction (Cullen, Link, Wolfe, & Frank, 1985; Jurik & Winn, 1987; Owen, 1988). These results differ from Britton (1997a) who reported that African-American correctional officers report higher levels of job satisfaction than white correctional officers.

When comparing non-minority to minority employees in the Federal system, race has not been shown to be a significant predictor of job satisfaction although African-Americans and Hispanics report significantly different levels of efficacy in working with inmates (Wright & Saylor, 1992). The authors explain the absence of a race effect as a possible result of improved race relations and an increase in cultural awareness. Although the literature in this area has suggested the lack of an effect of race on job satisfaction, the above discussion suggests that the relationship between the two variables is in need of further examination.

The effect of race on job satisfaction varies by geographical region. Lambert et al. (2002) suggest race impacts were mixed for state institutions in the North and Federal

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institutions. White southerners however reported more job satisfaction compared to

African-Americans. This finding, though not specific to region, has been replicated by

Britton (1997). Using data from the 1992 Federal Bureau of Prisons *Prison Social*

Climate Survey, Britton (1997) found that African-American Federal correctional officers

reported lower levels of job satisfaction.

Several studies have shown that race significantly influences levels of job stress

among correctional officers. Dowden and Tellier (2004) suggested that minorities

reported less stress. Similarly, Armstrong and Griffin (2004) who in their study of 5,540

correctional officers found that white correctional officers reported high stress levels.

Perhaps minority officers feel more comfortable with an increasingly minority inmate

population. Consistent stress differences by race may be an exception to the

generalization that demographics do not predict stress or satisfaction consistently.

Age and Job Tenure

Both age and job tenure have produced mixed effects on job satisfaction in

corrections as well as in policing (Zhao, Thurman, & He, 1999). Older correctional

officers report more job satisfaction (Hepburn & Knepper, 1993; Lambert, Hogan, &

Barton, 2002; Paoline, Lambert, & Hogan, 2006; Rogers, 1991). Toch and Grant (1982),

however, reported an upside down u-shaped curve for alienation and seniority, which

may have implications for how job satisfaction varies among correctional officers. In

their study of 4 New York state prisons, they found that officers with less than 5 years

and more than 20 years reported lower levels of alienation. These officers were deemed

more 'mellow' which may imply that they experienced more job satisfaction. In policing,

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the relationship goes the other way (Zhao, Thurman, & He, 1999); as tenure and age increase, job satisfaction decreases while cynicism increases (Niederhoffer, 1967).

Perhaps the effect of age on job satisfaction among correctional officers is mediated by other individual level variables like a greater sense of authority (Hepburn & Knepper, 1993). With more time on the job, older officers may feel a greater sense of authority, may have had a greater opportunity to adapt to the work environment, and thus are more satisfied.

The effect of age on job satisfaction also has been found to vary by state and by geographic region. In a literature review on the correlates of job satisfaction, Lambert et al. (2002) report a positive correlation between age and job satisfaction among correctional staff in New York. This relationship was not found in the South, West, or Midwest regions of the US (Lambert, Hogan, & Barton, 2002).

With regard to the relationship between job tenure and job satisfaction, Rogers (1991) found that officers with little experience reported higher levels of job satisfaction. Perhaps (1) job satisfaction may depend on the age at which an individual enters the corrections profession and (2) that less tenure corresponds with fewer responsibilities which results in higher levels of job satisfaction (Armstrong & Griffin, 2004). It is possible the relationship between tenure and job satisfaction remains unclear because studies have not sufficiently separated age and job tenure, resulting in a confounding of these effects.

Some studies have found age to significantly predict to job stress (but cf. Dowden & Tellier, 2004; but cf. Triplett, Mullings, & Scarborough, 1996; Triplett, Mullings, & Scarborough, 1999). Older officers report less stress (Armstrong & Griffin, 2004;

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Paoline, Lambert, & Hogan, 2006) and exhaustion and depersonalization (Carlson, Anson, & Thomas, 2003; Garland, 2004). Experience on the job helps, and generally older officers have more experience.

Education

Correctional administrators have attempted to "professionalize" the correctional officer job (Lambert, Hogan, & Barton, 2002) by hiring officers with increased levels of education. The effects of education on job satisfaction have been mixed. In a review of five studies measuring the association between education and job satisfaction, 3 out of 5 found a negative relationship between education and job satisfaction (see Jurik & Halemba, 1984), one found a positive relationship with education and one found no relationship between education on job satisfaction (see Lambert, Hogan, & Barton, 2002).

The association between education and job satisfaction may be complicated by other factors. One study showed education negatively affected job satisfaction for correctional officers in the southern and western regions of the United States, and for officers employed in the Federal system (Lambert, Hogan, & Barton, 2002). Another study found that gender mediated the relationship between education level and job satisfaction. In this study, there was a negative association between education and job satisfaction but only for women.

In a study of 154 correctional officers from two Federal prisons, Rogers (1991) examined the effects of educational level on job satisfaction. Negative effects of education on satisfaction (see Rogers, 1991) may be a counter-productive outcome of attempts to professionalize the correctional workforce. Hiring officers with more

education may have the unintended consequence of increasing the number of dissatisfied

correctional officer because officers will believe their education and skills are not being

used (Cullen, Link, Wolfe, & Frank, 1985).

Those with some college but no degree may be the most dissatisfied group

because of their 'inconsistent status' (Rogers, 1991). These individuals had experienced

college and altered their career goals as a result. The failure to obtain a degree, however,

blocked them from moving ahead.

<div align="center">Summary of Demographic Effects at the Individual-level</div>

The following demographic variables have shown consistent results. The

influence of age and job tenure on job satisfaction and stress among correctional officers

– being older and having longer tenure both relate to less stress and more satisfaction --

has been opposite the effects seen in the policing literature. More education has

consistently associated with more dissatisfaction.

Gender has predicted both job satisfaction and stress but not consistently. Like

gender, race also has produced inconsistent results for some outcomes; its impacts may

be moderated by geographic region and social support.

Though the effects of some demographic characteristics have been inconsistent, it

is premature to disregard their relevance when examining outcomes such as perceived

danger, job satisfaction, and job stress. Most studies have not separated individual from

institutional covariation between predictors and outcomes. Further, if demographic

impacts are mediated by other factors, and studies differed in whether those mediators

have been included, this might help explain inconsistent results. Additionally, most

studies have included only a small number of institutions, and institutional mixes have varied across studies.

Corrections research has begun to focus on the influence of the institutional environment, specifically organizational climate, on correctional officers' attitudes and behaviors. Before a discussion of the variables thought to predict organizational climate, the following is a brief discussion of the organizational perspective. This discussion, though brief, will help guide the present examination of prisons as organizations.

An organizational perspective hopes to discover how to best manage organizations (Mills & Tancred, 1992); in pursuit of that goal, it identifies similarities and differences within and between organizations (Lammers, 1978). Similarities between organizations in diverse settings --for example, schools and hospitals, "warrant the conclusion [that] there are general tendencies in organizations" (James & Jones, 1974, p. 492). Among those general tendencies are influences of dimensions of organizational climate on a wide range of psychological, behavioral, and organizational outcomes. Key elements of organizational climate relevant to outcomes in the prospective study are described below.

<div align="center">Organizational Climate Predictors</div>

Corrections research has identified several organizational variables that have predicted the above mentioned outcomes. Research suggests that perceived organizational climate are better at explaining job satisfaction among correctional officers and police officers than demographics (Britton, 1997b; Dowden & Tellier, 2004; Griffin, 2001; Hepburn, 1987; Jurik & Halemba, 1984; Lambert, 2004; Lambert, Hogan, & Barton, 2002; Patterson, Payne, & West, 1996; Stohr, Mays, Lovrich, & Gallegos, 1996;

<div align="center">25</div>

Zhao, Thurman, & He, 1999). Climate attributes examined have included participation in decision making, job autonomy and job variety, supervisory climate, role ambiguity, and danger. They have varying associations with job satisfaction and job stress.

Participation in Decision Making

Participation in organizational decision making may affect views toward the organization (James & Jones, 1974; Slate & Vogel, 1997; Toch & Grant, 1982). Individuals given the opportunity to express their autonomy and make decisions affecting their work environment may be more committed to the organization. This increases job satisfaction (Lambert, Hogan, & Barton, 2002), an important element of organizational climate.

Correctional officers in highly centralized institutions have reported less satisfaction, presumably arising from feelings of diminished responsibility and skill underutilization (Armstrong & Griffin, 2004; Griffin, 2001; Hepburn, 1987; Hepburn & Albonetti, 1980; Jurik & Winn, 1987; Lambert, 2004; Lambert, Hogan, & Barton, 2002; Paoline, Lambert, & Hogan, 2006; Rogers, 1991; Stohr, Mays, Lovrich, & Gallegos, 1996; Toch & Grant, 1982). Toch and Grant (1982) proposed that correctional officers participating in institutional reform find more meaning in their jobs. Officers participating in the decision making processes reported lower feelings of alienation and less job stress (Finn, 1998; Garland, 2004).

This association between participation in decision making and alienation may be mediated by organizational commitment. Officers who can effect more job change may be more committed to the organization (Dowden & Tellier, 2004). Whether decision

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making authority and commitment have independent effects or, as seems more likely, the latter mediates the effects of the former on stress, is not known.

Job Autonomy and Job Variety

James and Jones (1974) suggested that individual autonomy is an important dimension of the work environment. Individual responsibility fosters commitment to the organization and job satisfaction. Perceiving one's job as more important, more autonomous, and more challenging elevated job satisfaction (James & Tetrick, 1986). These processes affect work-related behaviors and attitudes which are key to influencing organizational climate.

Job autonomy and variety correlate with job satisfaction (Lambert, 2004). Officers who feel trusted to make decisions on their own are more likely to report increased job satisfaction. Also, those who feel their job includes a range of responsibilities report increased job satisfaction.

Yet results may vary by job type and gender. For example, human service workers were more likely than correctional officers to report having greater authority over inmates (Hepburn & Knepper, 1993), leading to their greater job satisfaction. Stohr et al. (1996) found significant differences in job satisfaction when comparing male and female officers. Females were more likely than males to focus on the cooperative nature of their work and this increased job satisfaction. The finding supports the notion that as workers, women may be more likely to be concerned with interpersonal relationships as opposed to the job at hand (Hochschild, 1989; Kanter, 1976).

Supervisory Climate and Co-worker Support

Social support, including supervisory support, has emerged as a clear component of organizational climate. With what they say and how they say it, supervisors shape the meanings employees attach to the organization (Naumann & Bennett, 2000). More communication between supervisors and employees keeps employees informed about work issues. More informed employees make better decisions leading to increased confidence on the job and higher job satisfaction. Supervisory support can be defined as supportive relationships between employees and supervisors. Supportive supervisors aid in reducing job stress, job dissatisfaction, and stress between work and home demands (Cullen, Link, Wolfe, & Frank, 1985; Garland, 2004) and employee burnout (Garland, 2004).

Positive relationships with supervisors and administrators are important dimensions of the work environment. Supportive behaviors between supervisors and co-workers foster a sense of belonging and commitment to the organization (Goñzalez-Roma, Peiro, & Tordera, 2002). Positive attitudes toward both supervisors and administrators increase job satisfaction among correctional officers (Griffin, 2001; Lambert, 2004; Lambert, Hogan, & Barton, 2002). Positive relationships with supervisors and administrators also strengthen the officers' overall bond to the organization.

Britton (1997) suggested the relationship between supervision and job satisfaction was "gendered." Satisfaction for women resulted from positive evaluations of the quality of their supervisors. Women were more likely than men to positively evaluate their supervisors and this led to increased job satisfaction (see also Camp and Steiger, 1995;

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but cf. Jurik & Halemba, 1984). The implication for the current study is that the influence of supervisory climate and co-worker support on perceived danger may be gendered.

Reported quality of supervision and training significantly predicted job satisfaction in one study (Griffin, 2001). When institutional level variables were added, however, only quality of supervision remained significant for both men and women. Quality of training remained significant for only males. This finding may be explained by the male officer-centered and male inmate training scenarios and models mentioned earlier.

Separate from communication between supervisors and employees are relationships between co-workers. Defined as kind and supportive relationships among workers (see Goñzalez-Roma, Peiro, & Tordera, 2002), co-worker support reflects and shapes organizational climate. Supportive co-worker behaviors include displays of concern for others within the work group. Supportive behaviors among co-workers aid in building work-group cohesion, commitment to the work environment, and a sense of belonging to the work group and the organization. This fosters commitment to the organization (Goñzalez-Roma, Peiro, & Tordera, 2002). Employees work to complete organizational goals. Supervisory and co-worker support each may enhance organizational commitment leading in turn to more job satisfaction. This process may increase job satisfaction which may in turn affect work-related attitudes and behaviors.

Officers reporting positive relations with co-workers report more job satisfaction which should lead to lower stress (Triplett, Mullings, & Scarborough, 1996). Nonetheless, it appears co-worker support relates to higher job stress (Cullen, Link, Wolfe, & Frank, 1985; Finn, 1998; Huckabee, 1992; Schaufeli & Peeters, 2000; Triplett,

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Mullings, & Scarborough, 1996). Perhaps officers who are more stressed seek out more support from their co-workers.

Among police, positive co-worker support decreases stress and increases job satisfaction (Martelli, Waters, & Martelli, 1989). Police officers are more likely to use coping skills, particularly social support, to deal with problems on the job (Kirkcaldy, Cooper, & Ruffalo, 1995).

Poor coping skills and situational factors, such as adverse relationships with the public, are thought to lead to stress among police officers (Anshel, 2000). The research in this area, however, reveals both non-significant and significant effects of coping on stress. Active coping, for example, problem-solving and exercise, may fail to have a direct effect on health or psychological symptoms (Burke, 1998). On the other hand, police officers are more likely to use social support such as advice from supervisors and friends as a successful coping skill than they are active coping strategies (Kirkcaldy, Cooper, & Ruffalo, 1995).

Role Ambiguity and Role Conflict

Correctional officers reporting increasing ambiguity in their roles over time have reported lower job satisfaction. Shifting between treatment vs. custodial orientations, for example, can increase role ambiguity, role strain and role conflict (Cullen, Lutze, Link, & Wolfe, 1989; Hepburn, 1987; Hepburn & Albonetti, 1980). Attempting to reconcile the differences in goals between treatment versus custody orientations leads to role ambiguity which increases job-related stress (Finn, 1998).

Role conflict also may increase work-home conflict. Officers experiencing role conflict on the job were more likely to experience increased conflict in their home (Triplett, Mullings, & Scarborough, 1996).

Effectiveness in Dealing with Inmates

Perceptions of how they interact with inmates influence officers' perceptions of their job and work environment (Conover, 2001). Zimmer (1986) suggested that because women were unappreciated and unwanted in the workforce, they felt less effective when working with inmates. Wright and Saylor (1991), however, reported men and women experienced the work environment and working with inmates similarly.

Perceived efficacy in working with inmates varies by race. Minorities, specifically African-Americans and Hispanics, have reported increased feelings of efficacy when compared to whites (Wright & Saylor, 1992).

Job-related Issues

Understaffing, overtime, and inmate demands increase stress (Finn, 1998; Garland, 2004; Triplett, Mullings, & Scarborough, 1996, , 1999). When understaffed and overworked, correctional officers experience stress because they think they are at increased risk (Wright & Saylor, 1991; Zupan, 1986). In addition, mandatory overtime leads to officers feeling overworked which in turn can lead to exhaustion and burnout among officers (Finn, 1998; Garland, 2004). Poor pay also increases job stress (Finn, 1998).

More inmate contact in general or an increase in the amount of time spent with the same inmates increases stress (Finn, 1998; Garland, 2004; Triplett, Mullings, &

Scarborough, 1996, , 1999). Many correctional administrations at state, federal and local levels offer stress training for officers. This training reduces stress (Finn, 1998).

Earlier Views on Organizational Climate

Before leaving the prison organization, a brief discussion of social climate is in order. Prior to research focusing on specific features of the organizational climate, an earlier body of work examined a broader construct, institutional social climate. Social climate has been described as the "variability in individual behavior…[which] is induced by ecological, social, and situational factors" (Allport, 1966, as cited in Moos, 1970). Researchers have been trying to develop indicators of prison climate since the 1970s. Moos and colleagues were one of the first to develop indicators of prison social climate which was turned into the *Social Climate Survey*. The survey provided a direct relationship between social climate on correctional units, reactions of residents to their units, and residents behavior (Moos, 1968). This finding led Moos to suggest that the broader organizational context, for example, interactions between correctional officers and inmates, was important in shaping behavior. The survey was later condensed into the Correctional Institutions Environment Scale, CIES.

Moos' survey instruments have been criticized for failing to thoroughly define social climate (James & Jones, 1974; Joyce & Slocum, 1984; Lindell & Brandt, 2000; Wright & Bourdouris, 1982). As a construct of empirical inquiry, social climate has been criticized for being a 'catch-all phrase' due to its perceived ability to predict stress, job satisfaction, and different behaviors among various individuals within the organization. In short, questions about construct validity persist.

As defined by Wright and Bourdouris (1982), social climate describes a "set of properties or conditions associated with the internal environment of an organization" (p. 258). It is broadly determined, by emerging from interactions between members, policies, structure, and processes within the organization (Ajdukovic, 1990; Wright & Bourdouris, 1982). Organizational climate is experienced by members of an organization; this experience, in turn, shapes how individuals perceive the organization and events occurring there. This definition seems similar to constructs currently used in the organizational climate literatures. It seems that the research has shifted away from assessing social climate and instead has concentrated on the organization more broadly, including both structure and climate.

Few would argue that the social environment of a prison does not influence behavior (Camp, 1994). The relationship between organizational variables, social climate, and staff behaviors and attitudes would seem relevant to the effective management of any organization. As a macro-level framework, the organizational climate perspective offers insight into how the structure of the prison environments influences employee stress and satisfaction.

The present study considered elements of social climate, for example, levels of co-worker and supervisory support. They are labeled here, however, as indicators of the broader organizational climate, and not as components of social climate.

Summary of Effects at the Organizational-level

Earlier work suggests features of the organization affect inmate violence (Camp, Gaes, Langan, & Saylor, 2003). There has been much earlier work on the correctional climate more broadly, and that has been followed by later work on specific features of the

organizational climate perceived by officers, for example, supervisory support and co-worker support. That later work has related these specific features to correctional officers' reactions to their jobs, for example, stress and satisfaction. Research at the individual and institutional levels is important in understanding the behavior of correctional officers.

It seems likely that features of organizational climate connect to structure of the organization itself (Duffee, 1980). It is likely that the climate of a correctional institution will vary depending on staffing issues, inmate composition, and duration and frequency of inmate contact (Duffee, 1980). The work on organizational climate is limited, however, in the following ways. Research to date has not controlled for institutional context perhaps explaining why the effects of individual characteristics have been inconsistent. Also, many institutional level variables, including violence rates and percent overcrowding, have not been included in analyses examining the influence of organizational climate. If the organizational climate impacts emerge at the institutional level then later work can examine how these institutional differences in climate are driven by specific features of the organizations themselves.

Due to the limitations described, it is important for research on correctional officers to examine which aspects of organizational climate contribute to perceived danger and which institutional traits mitigate perceived danger, and to observe whether effects emerge at the institutional level as well as at the individual level.

<center>Research Issues Beyond Work to Date</center>

Perceived danger has proven an important determinant of correctional officer satisfaction and stress, both of which connect with important outcomes with policy

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relevance. Two major clusters of predictors examined have been demographic features of correctional officers and their perceptions of their work climate. At this juncture, however, there has been hardly any work on perceived danger. Research that has been done has been limited by: a small number of institutions, a lack of examination of both the individual and institutional levels, a failure to examine correctional officers only, and the use of a perceived danger index which is neither job or gender-specific.

This study sought to isolate demographic and organizational correlates of perceived danger at both the individual and institutional levels using a large number of institutions from one correctional system. Organizational level differences in perceived danger may help identify which institutions report more or less perceived danger and what the officer mix and climate factors associated with differences in perceived danger across institutions. Impacts observed at the individual level shed light on which personal characteristics of the officer relate to perceived danger.

With regard to demographics, the proposed study examined impacts at the individual, work group, and institutional levels. These examinations lead to a fuller understanding of how basic demographics like gender and race relate to perceived danger. Also, the study explored the possibility that a number of variables will have stronger or weaker impacts depending on the institution. These data were treated as cross-sectional so in the case of organizational climate, stress and satisfaction, at both the individual and institutional levels, causality cannot be inferred.

Beyond individual main effects of officer demographics, the study also examines differential possible impacts of some of these variables. To examine hypothesized moderating effects, specific individual-level relationships in the analysis, or slopes, were

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allowed to vary (see Figure 6). The slope of gender was allowed to vary. It was expected that in some institutions, the mean danger difference between men and women officers would be larger. Should gender's influence vary across institutions, the next step would be to try and observe if the amount of influence linked to an institutional feature. This question has not been addressed by previous literature.

The gender discrepancy was expected to weaken when correctional officers report stronger co-worker support in an institution. Social support among co-workers was expected to moderate the effect of gender on perceived danger. Being a female correctional officer was hypothesized to be more stressful than being a male correctional officer. The stress and coping literature explains that social support can help buffer the impacts of stressful conditions (Triplett, Mullings, & Scarborough, 1996).

It was expected that the impact of supervisory support on perceived danger would also vary across institutions. Supervisory support has been shown to be an important dimension of organizational climate (Naumann & Bennett, 2000). The supervisory support indicators used in the present study capture the relationship and communication between supervisor and employee, the employee's opinion on measures of performance, and employee autonomy while on the job. Increased support from one's supervisors encourages better decision making among employees and keeps employees informed with regard to work-related issues (Naumann & Bennett, 2000). Supervisory support fosters commitment and belonging to an organization (see González-Romá, Peiró, & Tordera, 2002). It is plausible that levels of supervisory support could vary across organizations.

Should the influence of supervisory support vary across institutions, those varying slopes would be predicted using features of the institution. When officers fail to develop positive relationships with their supervisors, they are less likely to develop a strong commitment to their job. A lack of commitment makes the officer more susceptible to dangerous situations. It was anticipated that the detrimental effects of poorer supervisory support would be weaker in institutions where officers report stronger co-worker support. At the institutional level, this slope should be predicted by average co-worker support.

Turning to the question of mediating impacts, these can be tested in the following way. The analysis plan calls for a final model that includes both perceived stress and job satisfaction as predictors. Although the literature has not addressed the causal relationship between perceived danger and these two variables, a case can be made that both more stress and less satisfaction might elevate perceived danger.

Even though no study has assessed the extent to which job dissatisfaction or job stress predicts perceived danger, a case can be made for such an alternate ordering. Specifically, officers who are dissatisfied and experience high levels of job stress may experience low levels of support from their co-workers and the organization at large. These officers may disengage from their job leaving them less likely to be up to date on changing policies and procedures which may increase perceptions of danger. A similar process would occur at the institutional level. Institutions with higher average dissatisfaction or job stress would be more likely to have higher average levels of perceived danger. Institutions with more dissatisfied and stressed officers may experience a higher than average rate of assaults against staff as well as inmates. This would be due to officers withdrawing from the job and from one another. Officers and their co-workers

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would be more susceptible to assaults which would increase perceived danger. A set of models will be run introducing the stress and dissatisfaction variables to test the hypothesis (a) after other predictors are accounted for, the two significantly predict perceived danger or if (b) the two have mediating roles in the model.

Comparing this final model to earlier ones will provide clues about potential mediating impacts. For example, if female officers report higher danger than male officers, this may emerge largely from the female officers feeling more stressed on the job. The issue for women in corrections is not solely being a numerical minority within the prison environment. As minorities in a masculine occupation, women are typically unwelcome and face pressures unique to them only, i.e., sexual harassment and child-care issues (Cullen, Link, Wolfe, & Frank, 1985; Hochschild, 1989, , 1997; Triplett, Mullings, & Scarborough, 1996).

A variable capturing an officers' perception of inmate-on-staff assaults will be introduced at both the individual and institutional level. It is expected that an officers' perception of their likelihood of assault will influence perceptions of danger. This line of reasoning is similar to the research on perceived risk and fear of crime which argues that perceptions of and potential for crime are thought to be causally more important than the direct experience of crime (LaGrange, Ferraro, & Supancic, 1992; Wyant, 2007). In the prison environment, perceived assaults may heighten the awareness of the potential for danger. To put it another way, risk of inmate on staff assaults drives perceived danger. Also, the exchange of secondary information between officers, i.e., whether a particular housing unit is dangerous, may also influence perceived danger.

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Turning to the institutional level, institutions with average perceived assaults above the sample average would have higher average perceived danger. Though the processes occurring at both levels may appear intuitive, feeling fearful on the job may lead to other behavioral outcomes such as absenteeism, turnover, and a high rate of reported physical and mental ailments among officers such as high blood pressure, depression, and anxiety.

Statement of the Model and Specification of Key Hypotheses

Statement of the Model

The proposed model examines (1) whether perceived danger varied across institutions, (2) what factors influence perceived danger at the individual and institutional levels, and (3) what institutional level variables help explain the variation across institutions and relationships between officer traits and perceived danger. The focus was on correctional officers in Federal correctional institutions. Predictors will include demographics; work-related variables such as tenure, gender isolation and racial isolation; perceptions of organizational climate; and perceived assaults. Job satisfaction and job stress were entered in later models. To separate within- from cross-institutional effects, variables at the individual level were group mean centered. This allowed the examination of multi-level impacts. A small number of cross-level moderating effects were tested.

Specification of Hypotheses

Several hypotheses at the individual-level (see Figures 2 and 3) express potential relationships between demographic and personal level variables and perceived danger.

1. Females will be more likely than male correctional officers to report perceived danger. As a minority in a predominantly masculine occupation, women will face pressures unique to them, for example, sexual harassment, which will lead to more perceived danger. This hypothesis is supported by the fear of crime literature which suggests that women are more vulnerable to attack which makes them more fearful (Rountree, 1998) and results in higher perceptions of danger.

2. Older than average officers will perceive less danger. Older officers may be more experienced and more satisfied. Their experience on the job will make them able to better anticipate dangerous situations. Consequently they will feel less danger.

3. African-American and Hispanic officers will perceive more danger than white officers. They will feel more isolated from the white majority (see racial distribution below) which will lead to more perceived danger.

4. Officers with more education will perceive less danger. Educated officers will be more professional and more aware of their environment as well as institutional policies and procedures, thus feel less danger.

5. Officers with more experience in a specific correctional institution may have clearer expectations of what to expect during their work as officers. This will lead to lower levels of perceived danger.

Two variables in the model are neither individual nor institutional. Using aggregate work group demographics, the variables capture work group isolation within the institution: gender isolation and racial isolation. The isolation of the work group by gender, to the author's knowledge, has not been examined to date.

6. The more isolated women are as a work group, the more danger they will perceive. Their isolation may lead to a lack of confidence in their decision making capabilities, which in turn may increase stress levels and perceptions of danger.

7. The more isolated African-Americans are as a work group, the more danger they will perceive. If they are a smaller fraction of the work group, African-Americans may feel more visible than their white counterparts. Increased visibility may lower confidence and increase perceptions of danger.

Key hypotheses at the individual-level suggest important relationships between climate variables and perceived danger.

8. Officers who report clearer communication within the organization will report lower danger. They will feel more empowered due to high level of communication which makes them more aware on the job which will lead to less danger.

9. Officers with more positive views of supervisors will pay closer attention to supervisor directives, making them more aware of the current environment and resulting in less perceived danger.

The impacts of stress and satisfaction are also explored.

10. Higher job stress may correlate with more perceived danger. High job stress makes officers less aware of their environment; this may lead to poor decision making and more perceived danger.

11. More job satisfaction correlates with lower perceived danger. Officers who are more satisfied with their job and the prison organization in general will feel more

comfortable and be more likely to support its goals. This process will lead to less

perceived danger.

12. Perceptions of more inmate-on-staff assaults relates to more perceived danger.

The potential for assaults will heighten perceptions of risk and danger. This may

lead to carelessness, a fear of enforcing their authority over inmates, and

increased perceptions of danger.

This section describes expected impacts at the institutional level. Except for security level

and region, institutional characteristics will be captured by aggregated survey variables

(Figures 4 and 5).

13. Institutions with higher percentages of either Hispanic or African-American

officers will have higher levels of average perceived danger. In institutions with

higher fractions of either Hispanic or African-American correctional officers,

many of whom were brought more recently into Federal correctional work,

officers may be less sure of one another, thus average perceived danger may be

higher.

14. Institutions with a higher proportion of female correctional officers may have

lower levels of average perceived danger. In institutions with higher proportions

of female officers, women officers may feel less isolated, and this could result in

lower average perceived danger. In addition, some of the gender in corrections

literature suggests that a higher ratio of women officers may strengthen a

nurturing element in these settings, which also would result in lower average

perceived danger.

15. Longer average job tenure will lead to lower average perceived danger.

    Institutions with employees who have longer job tenure will have less average

    perceived danger. Institutions with employees who have longer job tenure will

    have a broader shared experience base resulting in a stronger sense of the group

    about how to proceed.

16. An increase in the average age of officers will lead to lower average perceived

    danger. In institutions with employees who are older than the average officer, the

    officer work force will be more satisfied and have more experience on the job

    thus reporting less perceived danger.

17. Higher average education will correlate with lower average perceived danger.

    With a more broadly educated officer force, communication across officers

    should be clearer, and it should be easier to anticipate dangerous situations.

Turning to organizational climate hypotheses:

18. Institutions with higher average co-worker support will have lower average levels

    of perceived danger. With stronger co-worker support, correctional officers may

    be more willing to support one another in dangerous situations.

19. Institutions with higher than average effectiveness in working with inmates will

    have lower average perceived danger. In institutions where officers feel more

    effective in working with inmates, the officer work group will be more willing to

    quell possible dangerous situations through communication with inmates rather

    than through use of force thus leading to lower average perceived danger.

20. Higher average job satisfaction will link to lower average perceived danger. In

    institutions where work group needs are met, officers receive proper training, and

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report good relationships with supervisors and co-workers. In an institution where officers are more satisfied, the group's view suggests a better "fit" to the demands of the institution; thus, the work group may be more willing to accept danger.

21. Institutions with higher than average job stress will have higher than average perceived danger. In institutions where officers report more stress on average, the work group may be seen as less reliable.

22. Higher than average perceived assaults will be associated with higher than average perceived danger. With more perceived assaults occurring in the work environment, correctional officers may be more fearful of future victimization which leads to increased perceived danger.

At the institutional level, security level will relate positively to perceived danger (Hypothesis 23). Institutions with a higher security level are more likely to experience more inmate misconduct, specifically violent misconduct (Camp, Gaes, Langan, & Saylor, 2003). These institutions will have higher than average levels of perceived danger.

Previous research on job satisfaction and job stress of correctional officers and correctional personnel has demonstrated inconsistent results with regard to the influence of geographic region. To control for variations in perceived danger, the present analysis controlled for geographic region (central, east, and west).
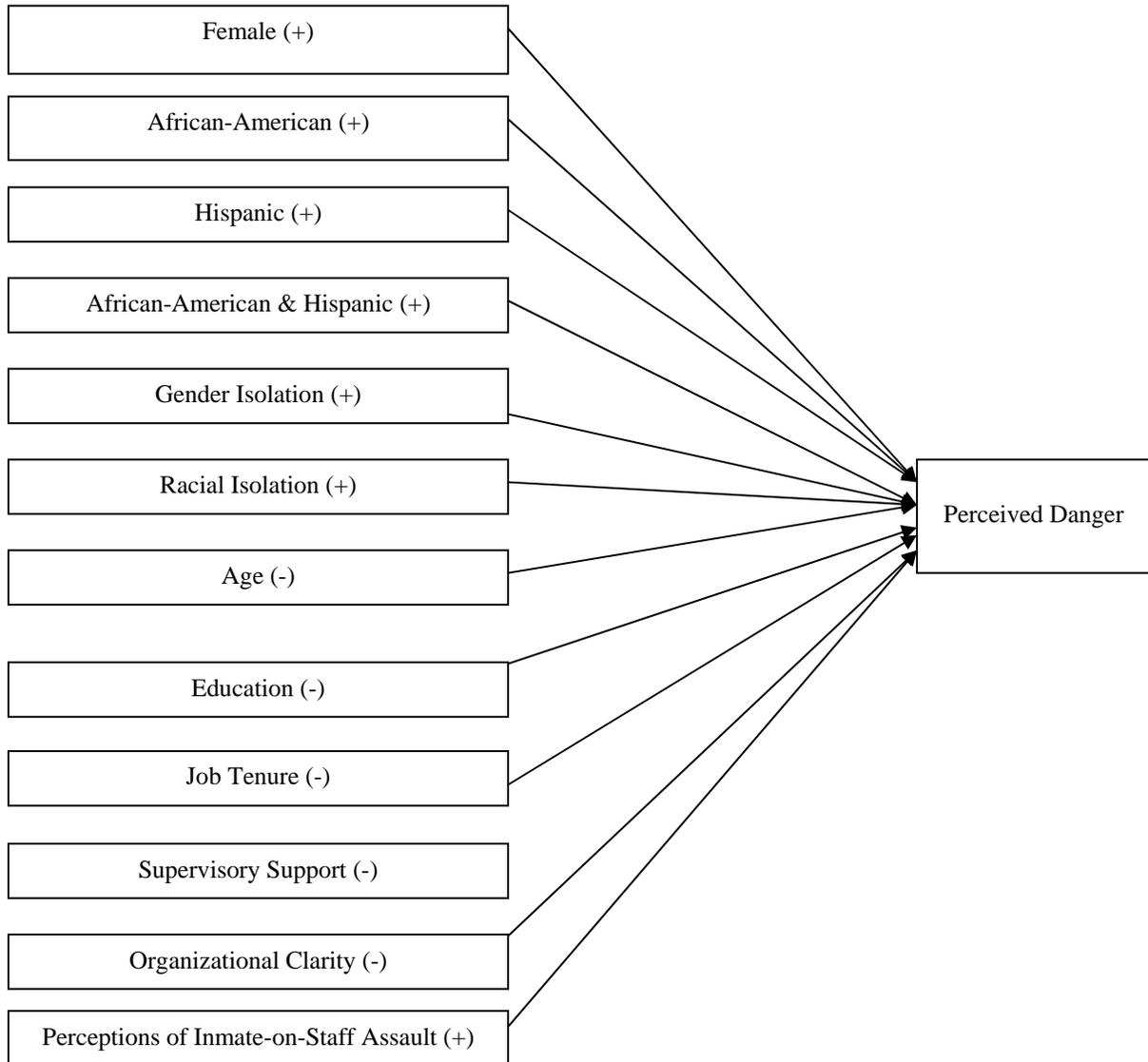
Figure 2. Individual-level Hypothesized Conceptual Model

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┌─────────────────────────────────────────┐
│            Female (+)                    │
│        African-American (+)              │
│            Hispanic (+)                  │                        ┌──────────────────────┐
│  African-American & Hispanic (+)         │                        │                      │
│        Gender Isolation (+)              │                        │  Perceived Danger    │
│        Racial Isolation (+)              │───────────────────────▶│                      │
│             Age (-)                      │                        └──────────────────────┘
│           Education (-)                  │
│          Job Tenure (-)                  │
│      Supervisory Support (-)             │
│      Organizational Clarity (-)          │
│ Perceptions of Inmate-on-Staff Assaults (+) │
└─────────────────────────────────────────┘
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                                    ┌──────────────────────┐
                                    │   Job Stress (+)   │
                                    │ Job Satisfaction (-) │
                                    └──────────────────────┘
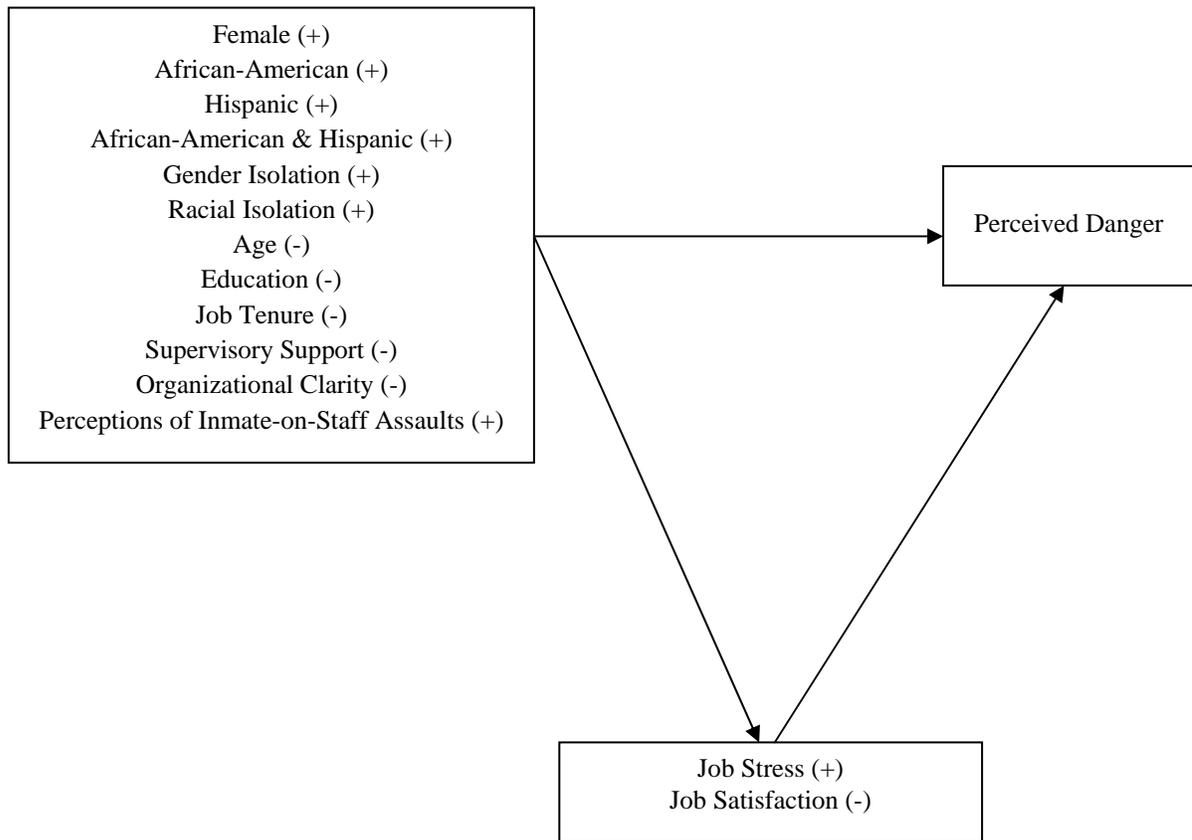
Figure 3. Individual-level Hypothesized Conceptual Model Including
Job Stress and Job Satisfaction

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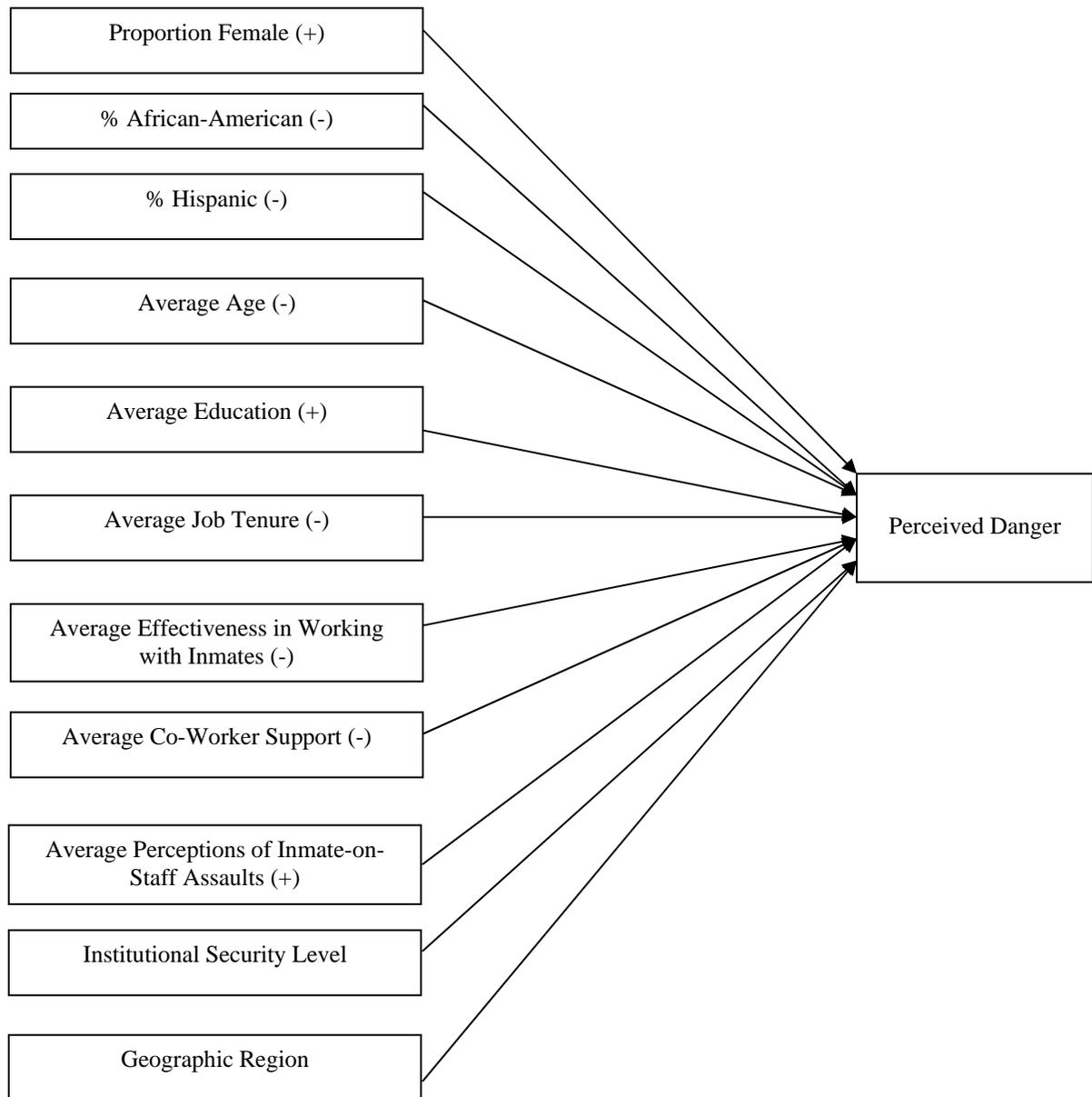
Figure 4. Institutional-level Hypothesized Conceptual Model
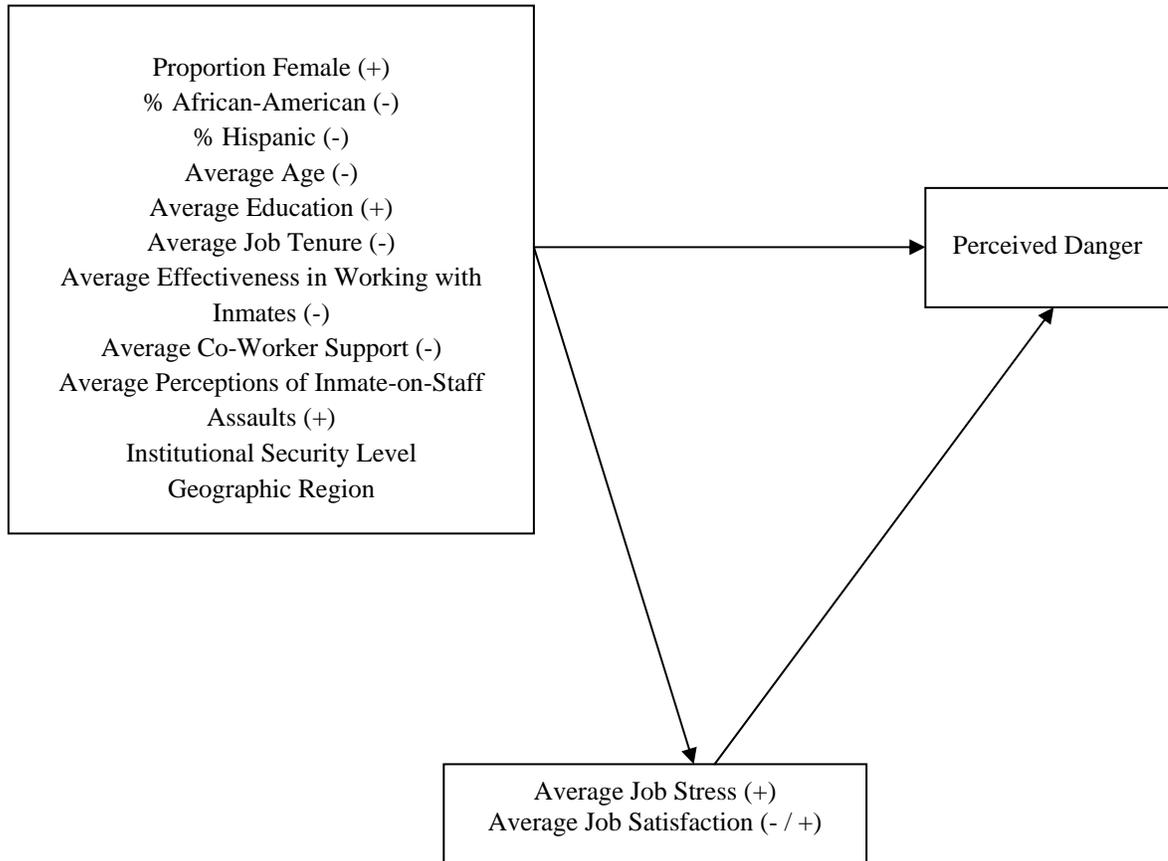
Figure 5. Institutional-level Hypothesized Conceptual Model Including
Average Job Stress and Average Job Satisfaction
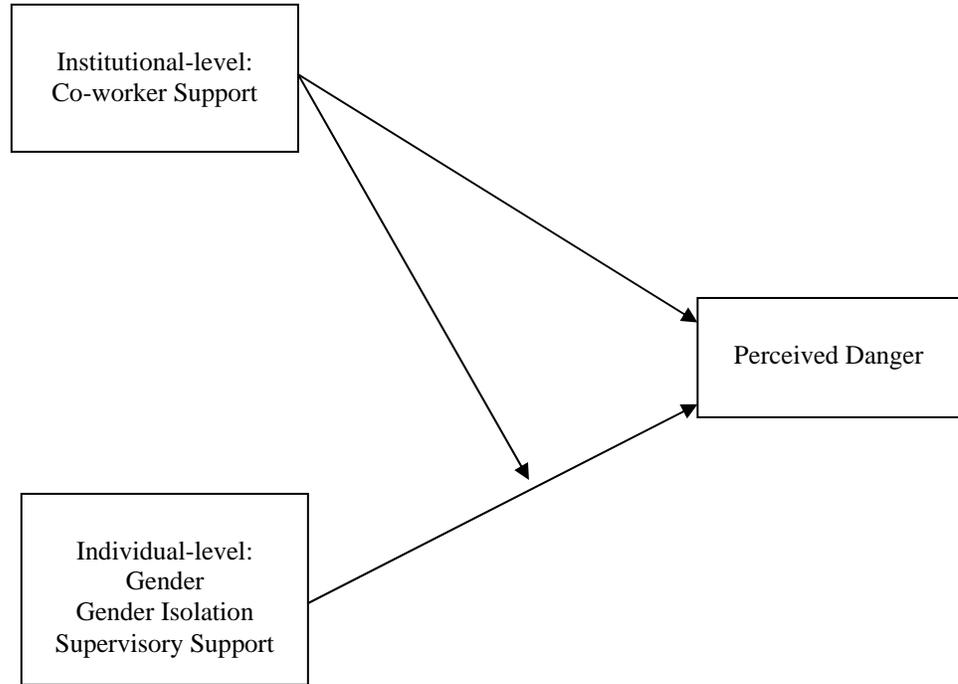
Figure 6. Cross-level Impacts Hypothesized Models

CHAPTER 3

METHODS

Data

Survey data collected by the Federal Bureau of Prisons was used. The Prison Social Climate Survey (PSCS) is an annual survey soliciting "staff and inmates for their subjective observations of the prison's environment" (Saylor, 1984a, p. 1). There are two versions of the PSCS, one for inmates, one for staff. Here only BOP staff surveys completed by correctional officers are used. The staff version taps specific features of organizational climate (Saylor, 1984a). BOP staff already have established the internal consistency of several climate indices. Climate measures were designed to be aggregated and "yield measures of organizations as a whole" (Saylor, 1984b, p. 4).

Sample

All categories of staff complete the PSCS. The present study analyzed data from only version 1 of the *Prison Social Climate Survey* collected from 2001 to 2005 for individuals whose job category was coded 'correctional services/custody.' The reason for using data from version 1 of the PSCS will be discussed in a later section. The five years of data were merged into one dataset. The means of the danger items and indices were compared across years. Results indicate that average levels of perceived danger do not differ significantly by year. Sample demographics for correctional officers in the sample appear in Table 3, aggregated across all five years.

Table 3. Federal Correctional Officer Sample Demographics

	Male	Female	Total
Sample N	2,569	385	2,954
Race			
White	1,731	166	1,897
African-American	462	162	624
Other	50	12	62
Ethnicity			
Hispanic	326	45	371
Average Age			
Years	35.93	35.73	35.73
Average Job Tenure			
Years	6.99	6.96	6.96
High School Education			
% Greater Than HS	72	73	73
Security Level			
Administrative	422	92	514
Low	632	109	741
Minimum	70	32	102
Medium	867	105	972
High	578	47	625

Note. Data from version 1 of the Federal Bureau of Prisons *Prison Social Climate Survey*. The data were derived from a random subsample of correctional officers employed with the BOP for more than six months from the years 2001 to 2005. N respondents = 2,954; N institutions = 106.

The original sample of correctional officers included 4,150 observations. It could

not be determined if there were multiple observations of the same officer in the sample.

One item in the PSCS asked if the respondent had completed the survey in the previous

year. Using this information, all observations from 2001 were kept because data from the

previous year (2000) were not included in the analysis. Those officers who were surveyed

in both 2002 and 2001 were excluded from the analysis. Thus, these officers are only

observed once.

It could not be determined, however, if the officers sampled in 2003 – 2005 were

observed more than once. Therefore, officers who reported completing the PSCS in the

previous year were excluded from the sample. The sample was reduced to 2,954

correctional officers.[1]

<div align="center">Design and Sampling Structure of the PSCS</div>

Each version of the PSCS includes seven sections: socio-demographic, quality of

life, personal safety and security, personal well-being, community environment and

housing preferences, work environment and a section focusing on special issues. These

issues have been viewed as key to prison management (Saylor, 1984a).

The sheer volume of questions on the PSCS was determined to be a burden for

those staff selected for inclusion in the survey. For this reason, the survey instrument was

divided into four versions. The four versions of the survey were randomly distributed to

staff members based on the combination of officer birth date and month: version 1 – odd

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[1] Analyses were completed using the original sample of correctional officers (n = 4,150) and a sample of
correctional officers who completed the *Prison Social Climate Survey* in 2001 and 2002. These officers
were observed once. Patterns of significance were similar except that: (a) the impacts of organizational
climate (organizational clarity and supervisory support) and officer age were not significant correlates of
perceived danger for the reduced sample (n = 1,317) and (b) average co-worker support correlates with
average perceived danger in the reduced sample model though was completely mediated by perceived
assaults for the original sample. Contact author for questions related to these analyses.

month and even day; version 2 – odd month and odd day; version 3 – even month and even day; and version 4 – even month and odd day. Since its annual implementation in 1988, variables have been added to or deleted from the survey, but the basic content of the survey remains unchanged (Saylor, 1984a).

Most survey items ask respondents to consider events in the previous six months although a few items ask about the previous 12 months. Most questions were in a Likert format with responses ranging, for example, from 'strongly disagree' to 'strongly agree.' Several sets of questions were used in the creation of scales such as job satisfaction and job stress. Some of these scales have been recreated using only the sample of correctional officers. The factor structure and Cronbach alpha's of the recreated scales were comparable to those previously reported by the BOP. The means of the danger items and the index were compared across years. The item averages and index average scores did not vary across years. Randomization checks on gender, race, ethnicity, job tenure, age, and education confirmed there were no differences in the proposed variables and indices across the sample years.

The sampling frame at each institution included all staff. Respondents were sampled using a stratified probability proportional to size (PPS) sample where the strata were sex, race, occupational specialty, and supervisory status. Samples were self weighting within each institution. Weights must be applied in any multi-institutional analysis because roughly the same numbers of surveys were completed at each institution (Saylor, 1984a).

Different types of correctional jobs were sampled at different rates in the survey. Those sampling rates varied across institutions. Correctional officers, however, were

always sampled at the same rate across all institutions, thus their weights are always 1. Analyzing the weighted file for them, therefore, is equivalent to analyzing an unweighted file. Unweighted estimates are preferred because they are unbiased, consistent, and have smaller standard errors (Winship & Radbill, 1994).

To be eligible for inclusion in the sampling frame, staff members must have been at the institution for at least six months prior to the administration of the PSCS. The sampling fractions are 100% for facilities with 120 employees or less, 30% for facilities with more than 400 employees, and 120 / n for facilities from 120 to 400 where n = the number of permanent full time staff at that facility (Saylor, 1984a).

Data Limitations

Thorough examination of the data revealed that no one survey version included all of the items necessary to create the indices included in the conceptual model (see Figures 2 and 3.) Because version 1 of the PSCS was the sole version to include the four items needed to create perceived danger, it was be the primary source of data used in the analysis.

Descriptives were run on the data from the 2001 to 2005 PSCS. Results indicated that the sample of particular groups of correctional officers, for example, women and Hispanics, were quite small.

<div align="center">Outcome of Interest</div>

Perceived Danger

The dependent variable, a perceived danger index, was comprised of four indicators. These indicators were different from the items presented by Wright and Saylor (1991). The five indicators were: (1) "How safe or dangerous do you think it has been in

<div align="center">54</div>

this prison for male staff members who have a lot of contact with inmates (dangerous in the sense of being killed or injured in an assault)?"; (2) "How safe or dangerous do you think it has been in this prison for female staff members who have a lot of contact with inmates (dangerous in the sense of being killed or injured in an assault)?; (3) "How likely do you think it is that a staff member would be assaulted in this institution?"; (4) "In the past 6 months, how often have inmates used physical force on staff members?: and (5) "Have you been physically assaulted in any way by an inmate within the last 6 months?"

In creating perceived danger, items 1 and 2 from Wright and Saylor (1991) were used. The remaining items used to create perceived danger measured circumstances in which staff were put into danger, i.e., inmate weapon use and inmate use of force, and if these instances of danger bothered them.

The survey included two gender-specific questions and opinion questions on staff safety. Two questions asked: "How safe do you think it has been in this prison for *female (male)* staff members who have a lot of contact with inmates (dangerous in the sense of being killed or injured in the assault)? Two questions ask: "Does the degree of danger to *female (male)* staff bother you?" For this index, two items asking about males were included in the index for male correctional officers, and two items asking about females were included for female correctional officers.

The index was created using the four individual items with gender-specific differences nested in. The items were z-scored and averaged so that each item contributed an equal amount of variance to the index. The Cronbach's alpha for the index was .82.

The index included the following items:

1 = How safe do you think it has been in this prison for *female (male)* staff members who have a lot of contact with inmates (dangerous in the sense of being killed or injured in the assault)? (0 = very safe / 1 = safe / 2 = somewhat safe / 3 = somewhat dangerous/ 4 = dangerous / 5 = very dangerous);

2 = Does the degree of danger to *female (male)* staff bother you? (0 = not at all / 1 = a little / 2 = a great deal);

3 = Does the frequency with which inmates have weapons bother you? (0 = not at all / 1 = a little / 2 = a great deal); and

4 = Does the frequency with which inmates have used physical force against staff bother you? (0 = not at all / 1 = a little / 2 = a great deal).

Predictors

Indices previously created by the BOP were recreated and assessed for internal consistency. Indices created to measure job satisfaction, job stress, and perceived supervisory support, have been tested and found to be adequate from a measurement point of view (Camp & Saylor, 1998). The indices were tested using all data from the PSCS which includes all surveyed BOP staff. For the purposes of this project, the indices were recreated using only data from surveyed correctional officers. The new indices were created using averages of z-scored items and were reassessed for internal consistency. The following section described and lists the items included in creating key indices. The indices include: organizational clarity, supervisory support, job satisfaction, job stress, effectiveness in dealing with inmates, and co-worker support. A single item was used to capture perceptions of inmate-on-staff assault.

Organizational Clarity

The organizational clarity index aims to measure subjective feelings toward the organizational environment. Higher scores suggest clearer communication within the organization, empowered employees, and a merit-based promotional system. The following ten items were used:

1 = The information I get through formal communication channels helps me to perform my job effectively (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

2 = In the BOP, it is often unclear who has the formal authority to make a decision (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

3 = It's not really possible to change things in the institution (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

4 = I am told promptly when there is a change in policy, rules, or regulations that affects me (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

5 = I have the authority I need to accomplish my work objectives (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

6 = Employees do not have much opportunity to influence what goes on in the BOP (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

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7 = Under the present system, promotions are seldom related to employee performance (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

8 = Management at this institution is flexible enough to make changes when necessary (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

9 = In the BOP, authority is clearly delegated (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree); and

10 = In general, this institution is run very well (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree).

To create the index, items 2, 3, 6, and 7 were reverse coded. The index yielded a Cronbach's alpha of .86.

Supervisory Support

This index differs from organizational clarity in that here, the focus was on the relationship and communication between supervisor and employee, the employee's opinion on measures of performance, and employee autonomy while on the job. Higher scores suggest a positive relationship between supervisor and employee, positive evaluations of work performance measures, and increased autonomy. The ten items included in the index were:

1 = My supervisor engages me in the planning process, such as developing work methods and procedures for my job (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

2 = My supervisor gives me adequate information on how well I am performing (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

3 = My supervisor asks my opinion when a work-related problem arises (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

4 = I have a great deal of say over what has to be done on my job (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

5 = On my job, I know exactly what my supervisor expects of me (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

6 = The standards used to evaluate my performance have been fair and objective (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

7 = The information I receive about my performance usually comes too late for it to be of any use to me (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

8 = My last annual performance rating presented a fair and accurate picture of my actual job performance (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

9 = My own hard work will lead to my recognition as a good performer (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree); and

10 = I often receive feedback from my supervisor for good performance (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree).

When creating the index, item 7 was reverse coded. The index yielded a Cronbach's alpha of .85.

Job Satisfaction

High scores on this index capture respondent satisfaction with current job within the BOP and job engagement. The five items in the index included:

1 = I would be more satisfied with some other job at this facility than I am with my present job (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

2 = My BOP job is usually interesting to me (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

3 = My BOP job suits me well (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

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4 = My BOP job is usually worthwhile (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree); and

5 = If I have a chance, I will change to a job at the same rate of pay at this facility (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree).

When creating the index, items 1, and 5 were reverse coded. The index yielded a Cronbach's alpha of .78.

Job Stress

High scores on the job stress index capture increased emotional hardness, feelings of fatigue, and worry. The index included the following six items:

During the past 6 months, how often have you experienced:

1 = A feeling that you have become harsh toward people since you took this job (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

2 = A feeling of worry that this job is hardening you emotionally (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

3 = A feeling of being emotionally drained at the end of the workday (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

4 = A feeling that you treat some inmates as if they were impersonal objects (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

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5 = A feeling that working with people all day is really a strain for you (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time); and

6 = A feeling of being fatigued when you wake up in the morning and have to face another day on the job (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time).

When created, the index yielded a Cronbach's alpha of .87.

Effectiveness in Dealing with Inmates

High scores on the index capture the officer's opinion of accomplishment gained from working with inmates, the predictability of the prison environment, and his/her ability to create a relaxed environment in which to control interactions with inmates. The four items included:

During the past 6 months, how often have you experienced:

1 = An ability to deal very effectively with the problem of inmates (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

2 = A feeling that you are positively influencing other people's lives through your work (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

3 = A feeling of accomplishment after working closely with inmates (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time); and

4 = A feeling that you can easily create a relaxed atmosphere with inmates (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time).

When created, the index yielded a Cronbach's alpha of .76.

Co-worker Support

Higher scores on this index reflect clearer communication with co-workers, stronger feelings that work-related ideas and opinions are valued, and a stronger sense of effectiveness in working with others. The four item index included:

During the past 6 months, how often have you experienced:

1 = A feeling that your work-related ideas and opinions are valued by others (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

2 = A feeling that your ideas and opinions are misunderstood (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

3 = A feeling that you work well with your coworkers (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time);

4 = A feeling that you can communicate effectively with your coworkers (0 = never / 1 = very rarely / 2 = rarely / 3 = now and then / 4 = often / 5 = very often / 6 = all the time).

When creating the index, item 2 was reverse coded.

Index Caveat

The items used to create the co-worker support index were not included in version 1 of the PSCS. They were, however, included in versions 2 and 4. The following steps were taken to create an instrumented proxy for co-worker support.

Versions 1 and 2 of the PSCS were compared to observe the number of survey items that fit the following criteria: items that were not already included in the model and items that were included in version 1 of the PSCS. There were a total of 13 items that fit both criteria.

A series of regression models were used to predict co-worker support. After a complete series of regression models, the following six items were selected to create the instrumental variable:

1 = *During the past six months*, I believed that: I am currently looking for or considering another job outside the BOP (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

2 = *During the past six months*, I believed that: this institution is the best in the whole BOP (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

3 = *During the past twelve months*, I believed that: training at this facility has improved my job skills (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

4 = *During the past twelve months*, I believed that: the facility's executive staff support the training program (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree);

5 = *During the past twelve months*, I believed that: I received the kind of training that I need to perform my work well (0 = strongly disagree / 1 = disagree / 2 = somewhat disagree / 3 = undecided / 4 = somewhat agree / 5 = agree / 6 = strongly agree); and

6 = *During the past six months*, how often have *other staff* directed any of the following types of uninvited and unwanted behaviors toward you: receipt of sexual letter(s), telephone call(s), or material(s) of a sexual nature (0 = never / 1 = once / 2 = a few times / 3 = once a month / 4 = a few times a month / 5 = once a week / 6 = a few times a week / 7 = every day).

A frequency distribution of the six items showed that of the items showed that, on average, less than 1.13% of data were missing. Data were imputed using a missing values EM (expectation-maximization) algorithm (SPSS, 1997). Items were recoded and the regression was run.

The co-worker support instrumental variable was created using the predicted scores from the following equation:

Co-Worker Support = -.69 + (.037 * job look) + (.068 * institution better) + (.046 * train improve) + (.053 * train support) + (.057 * train well) - (.091 * sex letters).

Ideally, instrumental variables have an R^2 of at least .50. The R^2 here was .22. Because this instrument is so weak, it is recognized that the impacts of co-worker support may be underestimated.

Demographics

Gender. (0) male and (1) female.

Race/Ethnicity. Three dummy variables were created to reflect: (a) African-American, non Hispanic = 1, other = 0; (b) Hispanic, non African-American = 1, other = 0; (c) African-American and Hispanic = 1, other = 0.

Education. (0) high school education and (1) greater than high school education.

Age. Age in years at last birthday.

Job tenure. Years of employment with the Bureau of Prisons.

Gender isolation for each gender in each institution. $\sqrt{N - n_j / N}$, where N=the total number of officers at the institution and n_j = the number of individuals of respondent's gender. A higher score indicates a work group in the institution that was more isolated by gender.

Racial isolation. $\sqrt{N - n_j / N}$, where N = the total number of officers at the institution and n_j = the number of African-Americans. A higher score indicates a work group in the institution that was more isolated by race.

Organizational Climate Predictor Variables

The average for each already-developed climate index in each institution captured institutional climate qualities. This fits with the original purpose of the PSCS. HLM estimates of reliability described within-institution, between-rater agreement on these features.

Demographic variable averages or proportions for each institution captured the composition of the work force at each institution.

Additional Institutional Indicators

Security level of inmates influences institutional inmate misconduct rates (Camp, Gaes, Langan, & Saylor, 2003). It seems likely that officers employed in higher security institutions will report more danger. Although the connection between inmate composition and average danger is probably complex, controlling for security level takes those connections into account to some degree.

The present analysis also controlled for geographic region (central, east, and west). Past studies on stress have found some differences.

The data set did not include actual inmate-on-staff assault data. A single item in the PSCS will be used as a proxy for perceptions of inmate-on-staff assault rates. The item reads: "In the past six months, how often have inmates used physical force on staff members?" (0 = no knowledge / 1 = never / 2 = very rarely / 3 = rarely / 4 = now and then / 5 = often / 6 = very often / 7 = all the time.) This variable was used as an institutional indicator at the individual level and as a possible aggregate influence on perceived danger. Past work on citizens' fear of crime has found that perceived risk predicts fear (Wyant, 2007). In an analogous fashion here, perceived assault rate was used to predict perceived danger.

Data Handling and Analysis Plan

Descriptives from BOP items were verified against published reports. For those variables with missing values, values were imputed using a maximum likelihood procedure known as the EM (expectation-maximization) algorithm (SPSS, 1997). The EM algorithm has two steps. The E (Expectation) step finds the "conditional expectation of the "missing" data given the observed variables" using covariance and correlation

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matrixes (SPSS, 1997, p. 41). Estimates are then substituted for the missing data. During the M (Maximization) step, "maximum likelihood estimates are computed as though the missing data had been filled in" (SPSS, 1997, p. 41). The EM method generates unbiased parameter estimates though standard errors are underestimated.

Variables at both the individual and institutional level showed no signs of multicollinearity defined as correlation values higher than .70. Tolerance levels were above .10. Variance inflation factors, VIFs, were acceptable with no values greater than 4.

Centering

Individual predictors entered into HLM models were centered (group mean centering) around corresponding institutional means (Raudenbush & Bryk, 2002). Centering allowed examining of multilevel impacts (Raudenbush & Bryk, 2002). Individual impacts captured pooled within-institution differences. Institutional variables were grand mean centered.

Initial Analysis

An ANOVA (fully unconditional model or null model) via HLM tested for significant outcome variation across institutions. Officers were nested within institutions. All slopes of individual level predictors were fixed save for those specifically mentioned.

Sequence of Models

There were two series of models. One set included job satisfaction and job stress in addition to the other predictors (Series 1). Since an argument could be made that either stress of satisfaction could themselves be affected by perceived danger, an argument can

be made for models excluding these two variables. So a second set of models without job satisfaction and stress were completed (Series 1a).

Demographic and organizational climate variables at the individual level were introduced in a first model. Perceived assaults were introduced into a second model to observe if it mediated the effects of the variables in the previous model Variables at the institutional level were added using the same two steps.

In the series of models without job satisfaction and job stress, the slopes of gender and supervisory support were allowed to vary. Differential impacts of gender and supervisory support were allowed here to vary because without job satisfaction and stress, the causal ordering of those models is more defensible.

Variable Specification

In the models described above, gender and race were examined in two ways: (1) using gender and race/ethnicity variables and (2) using gender isolation and racial isolation variables. Because gender was strongly correlated with gender isolation, and African-American race with racial isolation, separate models were run using the isolation instead of the gender and race variables.

HLM Equation

The level 1 model was represented using the following equation:

$Y_{ij} = \beta_{0j} + \beta_1 * $ (female / gender isolation) $ + \beta_2 * $ (African-American / racial isolation)

$ + \beta_3 * $ (Hispanic / racial isolation) $ + \beta_4 * $ (African-American & Hispanic / racial

isolation) $ + \beta_5 * $ (age) $ + \beta_6 * $ (job tenure) $ + \beta_7 * $ (education) $ + \beta_8 * $ (organizational

clarity) $ + \beta_9 * $ (supervisory support) $ + \beta_{10} * $ (perceived assaults) $ + \beta_{11} * $ (job

satisfaction) $ + \beta_{12} * $ (job stress) $ + r_{ij}$

where:

Y_{ij} = The level of perceived danger for correctional officer i in institution j.

β_{0j} = Predicted perceived danger for institution j for an average (B_1 –

B_{12}) officer in institution j.

β_1 = Difference between females and white males on perceived danger, with all

other predictors at the institutional mean.

β_2 = Difference between African-Americans and white males on perceived

danger, with all other predictors at the institutional mean.

β_3 = Difference between Hispanics and white males on perceived danger, with

all other predictors at the institutional mean.

β_4 = Difference between African-American/Hispanics and white males on

perceived danger, with all predictors at the institutional mean.

β_5 = Impact of each additional year older than the average correctional officer in

that institution on perceived danger, with all other variables at the institutional

mean.

β_6 = Impact of each additional year in job tenure than the average correctional

officer in that institution on perceived danger, with all other variables at the

institutional mean.

β_7 = Impact of whether high school was completed or not for the average

correctional officer in that institution on perceived danger, with all other variables

at the institutional mean.

β_8 = Impact of each additional unit increase above the institutional average on

the organizational clarity index in that institution on perceived danger, with all

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other variables at the institutional mean.

β_9 = Impact of each additional unit increase above the institutional average on the supervisory support index in that institution on perceived danger, with all other variables at the institutional mean.

β_{10} = Impact of each additional unit increase above the institutional average on perceived assaults in that institution on perceived danger, with all other variables at the institutional mean.

β_{11} = Impact of each additional unit increase above the institutional average on the job satisfaction index in that institution on perceived danger, with all other variables at the institutional mean.

β_{12} = Impact of each additional unit increase above the institutional average on the job stress index in that institution on perceived danger, with all other variables at the institutional mean.

r_{ij} = Unexplained error variance.

Varying Slopes

The slopes of two individual level variables, gender and supervisory support, were allowed to vary. If they varied significantly across institutions, it would support the varying slopes assumption that institutional context influenced officer dynamics. The impact of gender was expected to weaken in institutions with stronger average social support.

The impact of supervisory support was allowed to vary across institutions. If this variation appeared, it was anticipated that impacts of supervisory climate would be weaker in institutions with stronger average co-worker social support.

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Residual Analysis

The institutional residuals were saved at two points: (1) prior to adding any variables into the model and (2) after variables had been entered into the final model for both series and for both gender and race/ethnicity variables. The latter described remaining institutional variation.

CHAPTER 4

RESULTS

Descriptives: Univariate and Bivariate of Level 1Variables

The following figures display the histograms of the four items used to create perceived danger. All were normally distributed with skewness values between 0.075 and 0.434. Figure 7 shows the histogram of item 1 which read, "How safe do you think it has been in this prison for *female (male)* staff members who have a lot of contact with inmates (dangerous in the sense of being killed or injured in the assault)? The most common response for item 1 was somewhat safe (28%). The least common response was very dangerous (3.8%).

Figure 8 shows the histogram for item 2which asked, "Does the degree of danger to *female (male)* staff bother you?" The most common response for item 2 was a little (44.5%). The least likely response for this item was a great deal (13%).

Figure 9 shows the histogram for item 3 which asked, "Does the frequency with which inmates have weapons bother you?" The most common response for item 3 was a little (45.4%). The least common response for this item was a great deal (12.8%).

Figure 10 shows the histogram for item 4 which asked, "Does the frequency with which inmates have used physical force against staff bother you?" The most
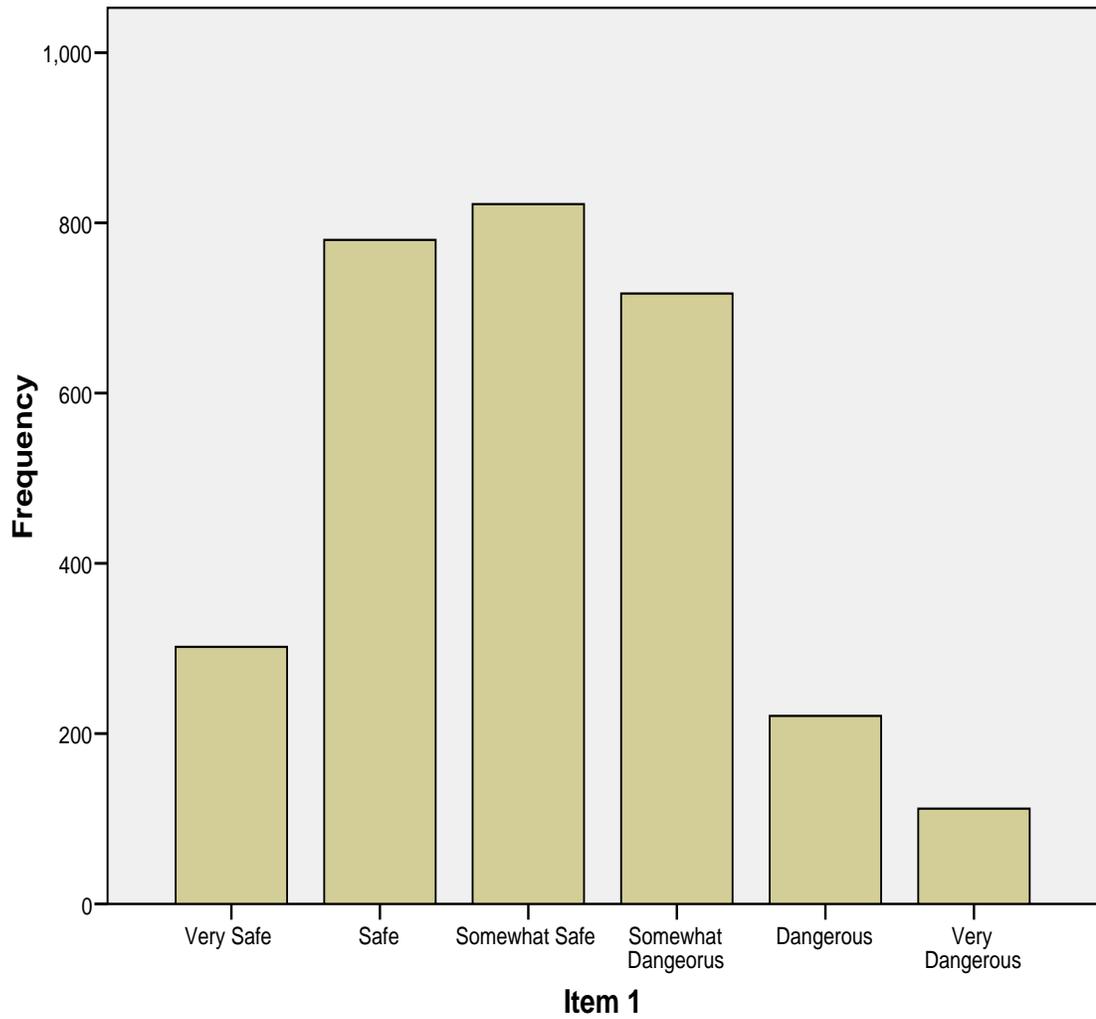
Figure 7. Histogram of Perceived Danger Item 1
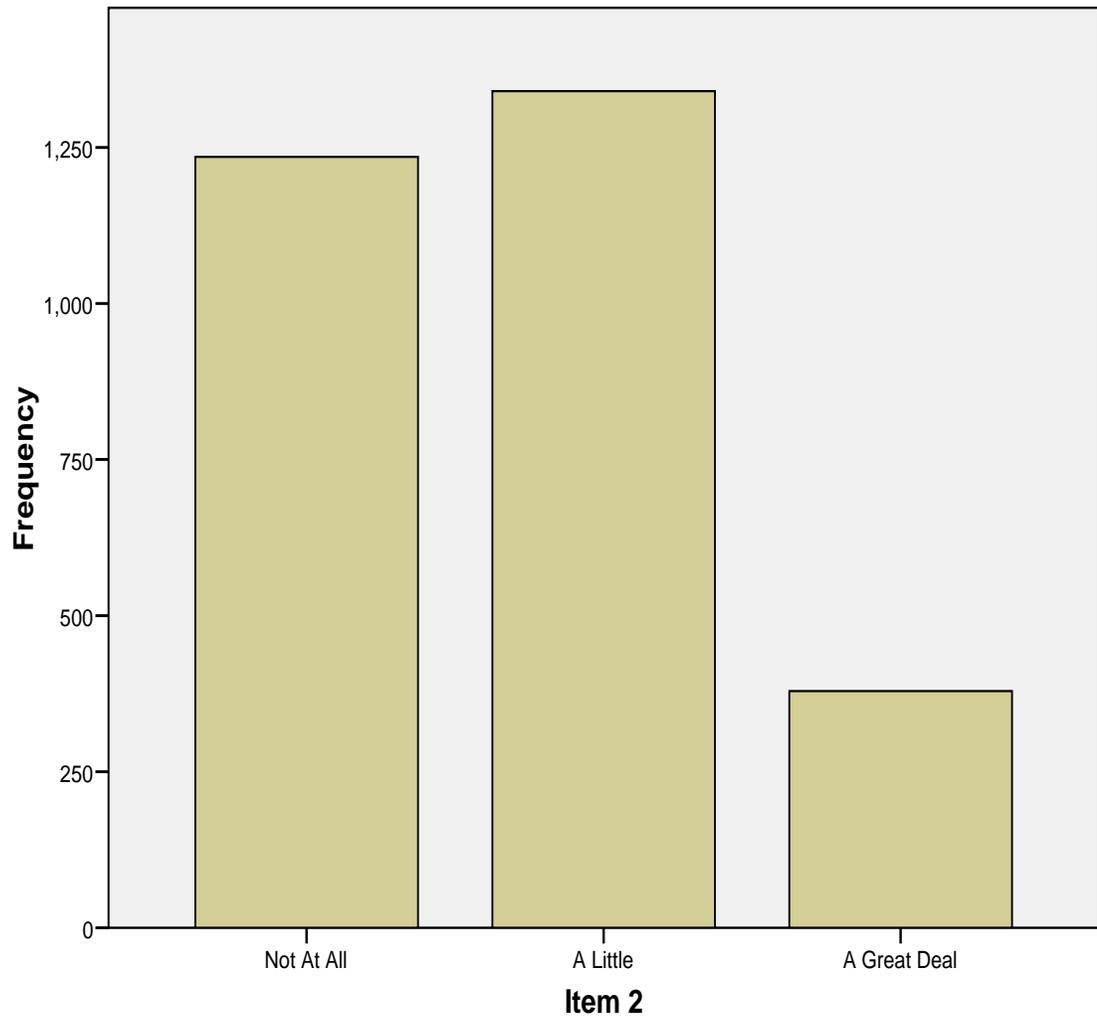
Figure 8. Histogram of Perceived Danger Item 2
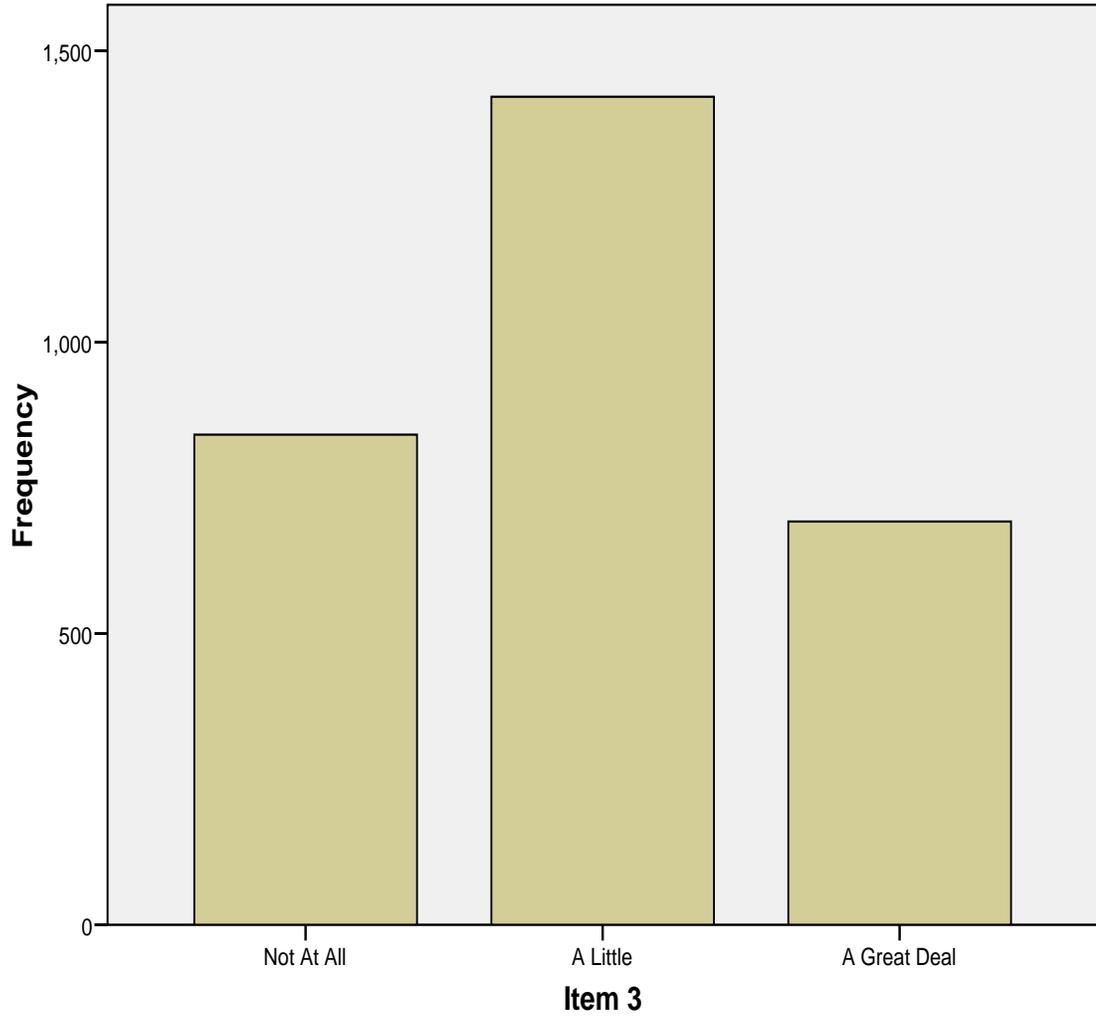
Figure 9. Histogram of Perceived Danger Item 3
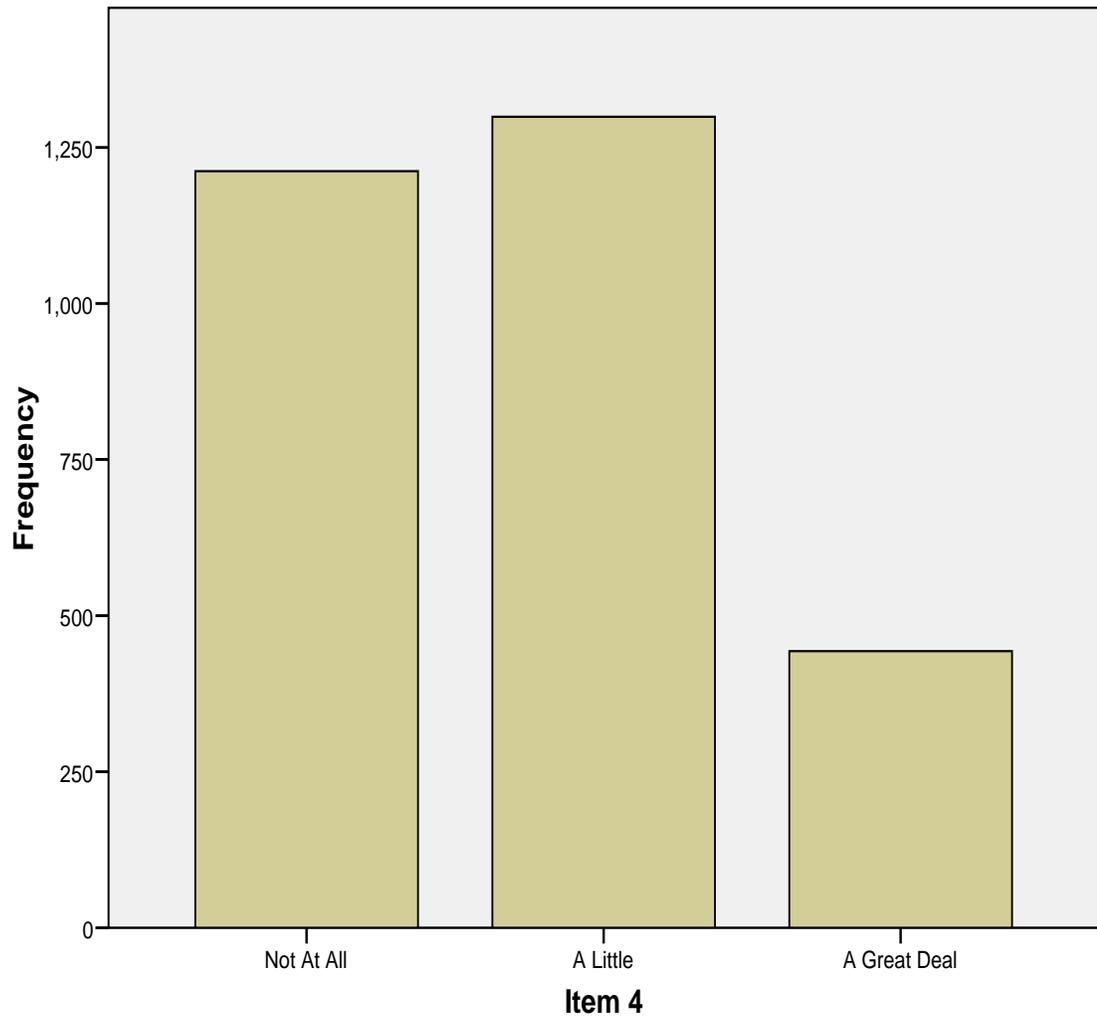
Figure 10. Histogram of Perceived Danger Item 4

common response for item 4 was a little (44%). The least common response for the item was a great deal (15%).

The inter-item correlations for the four index items were as follows: (a) correlation for item 1 and item 2 = 0.61, (b) correlation for item 1 and item 3 = 0.43, (c) correlation for item 1 and item 4 = 0.54, (d) correlation for item 2 and item 3 = 0.67, (e) correlation for item 2 and item 4 = 0.77, and (f) correlation for item 3 and item 4 = 0.67. The average inter-item correlation was 0.62.

Figure 11 shows the histogram for the index perceived danger based on the average of the z scored items (α = .82). The variable approached a normal distribution with a mean value of 0.011 and a skewness value of 0.326.

Table 4 reports descriptive statistics of all of the variables used in the analyses. The average correctional officer was white, non-Hispanic, male, 36 years of age, and had an average of 7 years on the job. Seventy-three percent of the sample had more than a high school education. The average officers' response on the perceived assault item was response 1, never.

Table 5 shows the correlations between individual-level variables. The variables shown have been grand mean centered. This was appropriate as individual-level variables were centered around the group mean when entered into HLM models. As shown, several variables are significantly related to one another. As mentioned, gender and gender isolation are highly correlated and were not entered into the same models. The same was true for race/ethnicity and racial isolation variables. The organizational climate variables are also highly correlated. This suggests that the indexes tap into somewhat similar issues
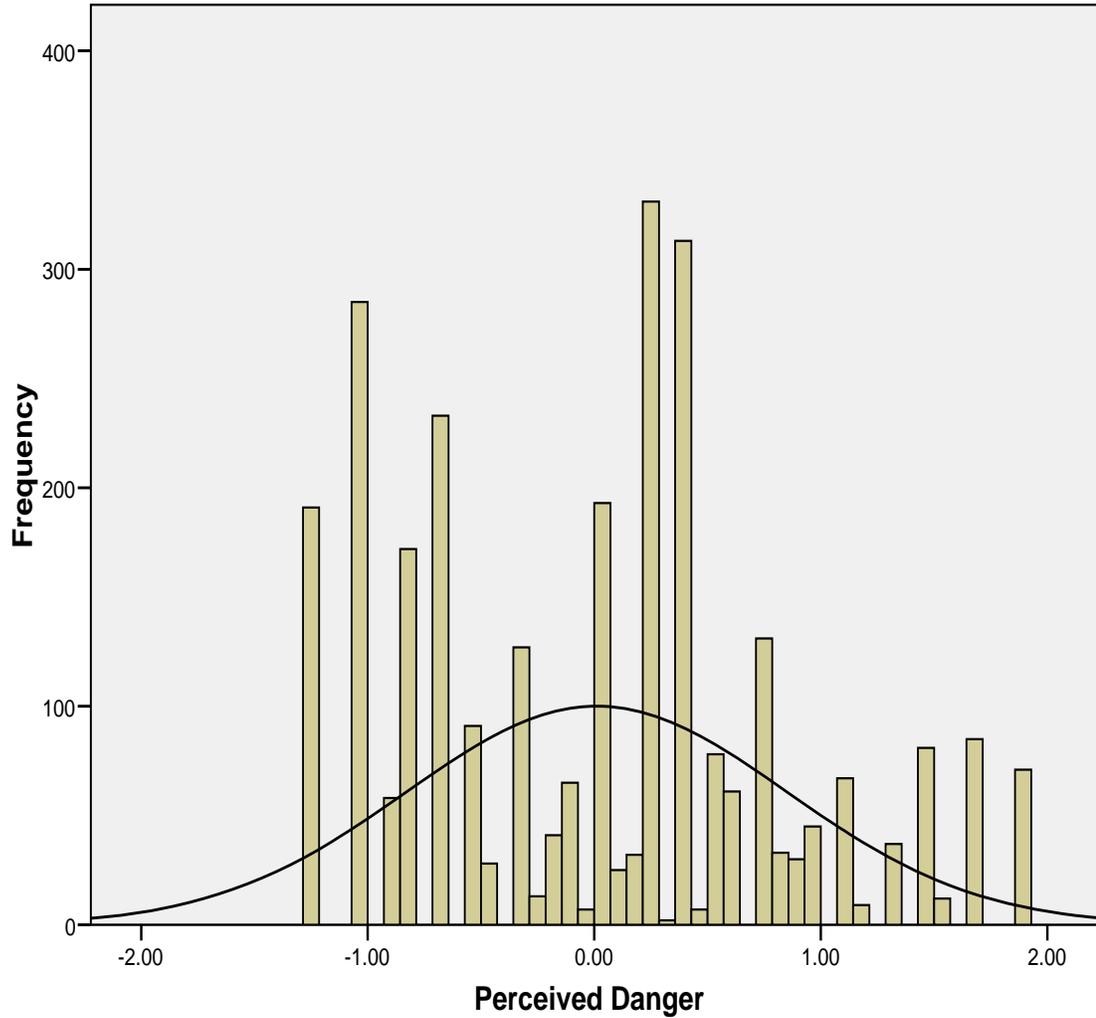
Figure 11. Histogram of Perceived Danger
Note. Index scores were based on average z scores.
A high score indicates more perceived danger.
(Mean = 0.01; SD = 0.841; N = 2,954)

Table 4. Descriptive Statistics for Individual-level and Institutional-level Variables

Variables	Mean	SD	Median	Minimum	Maximum
Dependent Variable					
Perceived Danger	0.01	0.84	0.05	-1.25	1.89
Individual-Level					
Female (= 1, 0 = male)	0.13	0.34	-	0	1
African-American (= 1, 0 = other)	0.21	0.41	-	0	1
Hispanic (= 1, 0 = other)	0.13	0.33	-	0	1
Age (years)	35.73	6.67	35	20	78
Education > High School (= 1, HS or less = 0)	0.73	0.44	-	0	1
Job Tenure (years)	6.96	5.25	6	1	28
Organizational Clarity (0 = strongly disagree, 6 = strongly agree)	0.003	0.67	0.04	-1.92	1.60
Supervisory Support (0 = strongly disagree, 6 = strongly agree)	-0.02	0.74	0.05	-1.73	1.53
Job Satisfaction (0 = strongly disagree, 6 = strongly agree)	-0.004	0.74	0.04	-2.13	1.46
Job Stress (0 = never, 6 = all the time)	-0.009	0.78	-0.03	-1.34	2.40
Gender Isolation [a]	0.40	0.23	0.34	0.00	0.99
Racial Isolation [b]	0.40	0.28	0.38	0.00	0.99
Perceived Assaults (0 = no knowledge, 7 = all the time)	1.34	1.34	1	0	6

Table 4. (continued)

Variables	Mean	SD	Median	Minimum	Maximum
Institutional-Level					
East (= 1, other = 0)	0.49	0.50	-	0	1
West (= 1, other = 0)	0.16	0.37	-	0	1
Low Security (=1, other = 0)	0.25	0.44	-	0	1
Medium Security (= 1, other = 0)	0.35	0.48	-	0	1
High Security (= 1, other = 0)	0.15	0.36	-	0	1
Proportion Female	0.14	0.10	0.12	0.00	0.52
% African-American	0.21	0.22	0.14	0.00	0.79
% Hispanic	0.13	0.17	0.06	0.00	0.93
Avg. Education (% HS)	0.28	0.10	0.27	0.06	0.55
Avg. Age	36.22	2.38	36.25	30.88	42.87
Avg. Job Tenure	6.99	1.50	6.88	4.31	12.27
Avg. Co-Worker Support	0.16	0.07	0.17	-0.01	0.34
Avg. Effectiveness	0.02	0.21	0.02	-0.54	0.80
Avg. Perceived Assaults	1.27	0.68	1.21	0.06	2.90
Avg. Job Satisfaction	0.01	0.18	0.01	-0.41	0.90
Avg. Job Stress	-0.01	0.22	-0.01	-0.86	0.55

Note. Individual-level and institutional-level variables from the 2001 – 2005 *Prison Social Climate Survey* (N respondents = 2,954; N institutions = 106). [a, b]. Scores reflect the work group's perception of isolation based on gender and race.

Table 5. Level 1 Correlation Table: Individual-level Variables

	1.	2.	3.	4.	5.	6.	7.	8.
1. Perceived Danger	-							
2. Officer Education	0.01							
3. Female	0.12**	-0.08**						
4. Af. Am	0.09**	-0.03	0.18**					
5. Hispanic	0.02	-0.00	-0.02	-0.25**				
6. Af.Am/ Hispanic	0.01	-0.01	0.03	-0.07**	-0.08**			
7. Age	0.05**	0.02	-0.06**	0.01	-0.05**	-0.01		
8. Job Tenure	-0.03	-0.02	-0.01	-0.01	0.01	0.01	0.00	
9. Gender Isolation	0.11**	-0.08**	0.95**	0.15**	-0.02	0.03	-0.06**	0.01
10. Racial Isolation	0.03	-0.02**	0.08**	0.59**	-0.12**	-0.01	-0.00	-0.01
11. Organizational Clarity	-0.23**	0.05**	-0.01	0.06**	0.02	-0.02	-0.06**	0.02
12. Supervisory Support	-0.19**	0.05**	0.00	-0.00	0.05**	-0.03	-0.03	0.01
13. Job Satisfaction	-0.16**	0.09**	-0.03	-0.03	0.01	-0.01	0.12**	-0.01
14. Job Stress	0.21**	-0.03	-0.03	-0.09**	-0.05**	-0.03	0.06**	-0.02
15. Perceived Assaults	0.30**	-0.00	0.01	-0.08**	0.03	0.02	0.05*	-0.01

Table 5. (continued)

	9.	10.	11.	12.	13.	14.	15.
1. Perceived Danger							
2. Officer Education							
3. Female							
4. Af. Am							
5. Hispanic							
6. Af.Am/ Hispanic							
7. Age							
8. Job Tenure							
9. Gender Isolation							
10. Racial Isolation	0.07**						
11. Organizational Clarity	-0.01	0.05**					
12. Supervisory Support	0.01	0.00	0.70**				
13. Job Satisfaction	-0.02	-0.13	0.45**	0.47**			
14. Job Stress	-0.03	-0.05**	-0.40**	-0.28**	-0.36**		
15. Perceived Assaults	0.01	-0.07**	-0.20**	-0.10**	-0.06**	0.18**	

Note. N respondents = 2,954; N institutions = 106.
*p < .05, **p < .01

within the organization. To decide which organizational climate variables to enter into HLM models, two random organizational-climate variables were selected for inclusion into the model. After a series of variable selections, it was found that organizational clarity and supervisory support made significant independent contributions to the model. For this reason, organizational clarity and supervisory support were the sole organizational-level variables entered into level 1 models.

<div align="center">Descriptives: Univariate and Bivariate of Level 2 Variables</div>

There were 16 variables included in the multilevel analyses. Table 6 displays the correlation matrix for institutional-level variables. As mentioned, several of the variables were aggregates of individual-level variables. Fifty percent of the institutions were located in the eastern region of the United States (n = 52); 16% were located in the western region (n = 17). More than one-quarter of the institutions were classified as low security institutions (n = 27); 35% were medium security level institutions (n =37) and 15% were high security institutions (n = 16).

The institutional averages were as follows: 14% of employed correctional officers were female, 21% were African-American, and 13% were Hispanic.

<div align="center">Descriptive Preliminary Analyses: Security Level and Geographic Region</div>

To help the reader get closer to the dependent variable, estimated "true" Empirical Bayes adjusted institutional means were graphed after an initial ANOVA via HLM prior to the addition of any predictors. The graphs show differences in perceived danger by institutional security level (n = 3) and geographic region (n = 2).

Figure 12 shows contrasts between a random sample of low, medium, and high security level institutions with other security levels (admin, and minimum). As shown,

Table 6. Level 2 Correlation Table: Institutional-level Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Avg. Perceived Danger	-								
2. Avg. Officer Education	0.17								
3. Proportion Female	-0.45**	-0.28**							
4. % Af. Am	0.00	-0.16	0.41**						
5. % Hispanic	0.22**	0.03	-0.06	-0.11					
6. Avg. Age	-0.19*	0.18	-0.05	-0.01	-0.02				
7. Avg. Job Tenure	0.16	0.18	-0.06	-0.04	-0.02	0.13			
8. Avg. Co-Worker Support	-0.32**	-0.05	0.17	0.40	0.01	0.14	0.01		
9. Avg. Effectiveness	-0.46**	-0.15	0.42**	0.38**	0.05	0.19	-0.04	0.41**	
10. Avg. Job Satisfaction	-0.25*	-0.06	0.19	-0.05	0.13	0.11	-0.08	0.45**	0.52**
11. Avg. Job Stress	0.48**	0.13	-0.38**	-0.39**	-0.03	0.03	0.12	-0.36**	-0.58**
12. Avg. Perceived Assaults	0.77**	0.11	-0.40**	-0.15	0.07	-0.27**	0.15	-0.30	-0.54**
13. Western Region	-0.05	0.00	0.03	-0.12	0.36**	-0.14	0.11	0.03	0.040
14. Eastern Region	-0.08	0.10	-0.05	0.21*	-0.24*	-0.09	-0.25**	-0.06	0.13
15. Low Security	-0.26	-0.13	0.11	0.09	0.04	0.02	-0.10	-0.03	0.11
16. Medium Security	0.18	0.09	-0.19*	-0.09	-0.01	-0.07	0.00	-0.15	-0.15
17. High Security	0.49**	0.16	-0.31**	-0.15	-0.06	-0.17	0.07	-0.04	-0.44**

Table 6. (continued)

	10.	11.	12.	13.	14.	15.	16.	17.
1. Avg. Perceived Danger								
2. Avg. Officer Education								
3. Proportion Female								
4. % Af. Am								
5. % Hispanic								
6. Avg. Age								
7. Avg. Job Tenure								
8. Avg. Co-Worker Support								
9. Avg. Effectiveness								
10. Avg. Job Satisfaction								
11. Avg. Job Stress	-0.53**							
12. Avg. Perceived Assaults	-0.19	0.43**						
13. Western Region	0.01	-0.11	0.07					
14. Eastern Region	-0.07	-0.10	-0.08	-0.43*				
15. Low Security	0.04	-0.14	-0.39**	-0.08	-0.05			
16. Medium Security	-0.06	0.01	0.15	0.00	0.15	-0.43**		
17. High Security	-0.07**	0.30**	0.60**	0.03	-0.10	-0.25**	-0.31**	

Note. N respondents = 2,954; N institutions = 106.
*$p < .05$, **$p < .01$
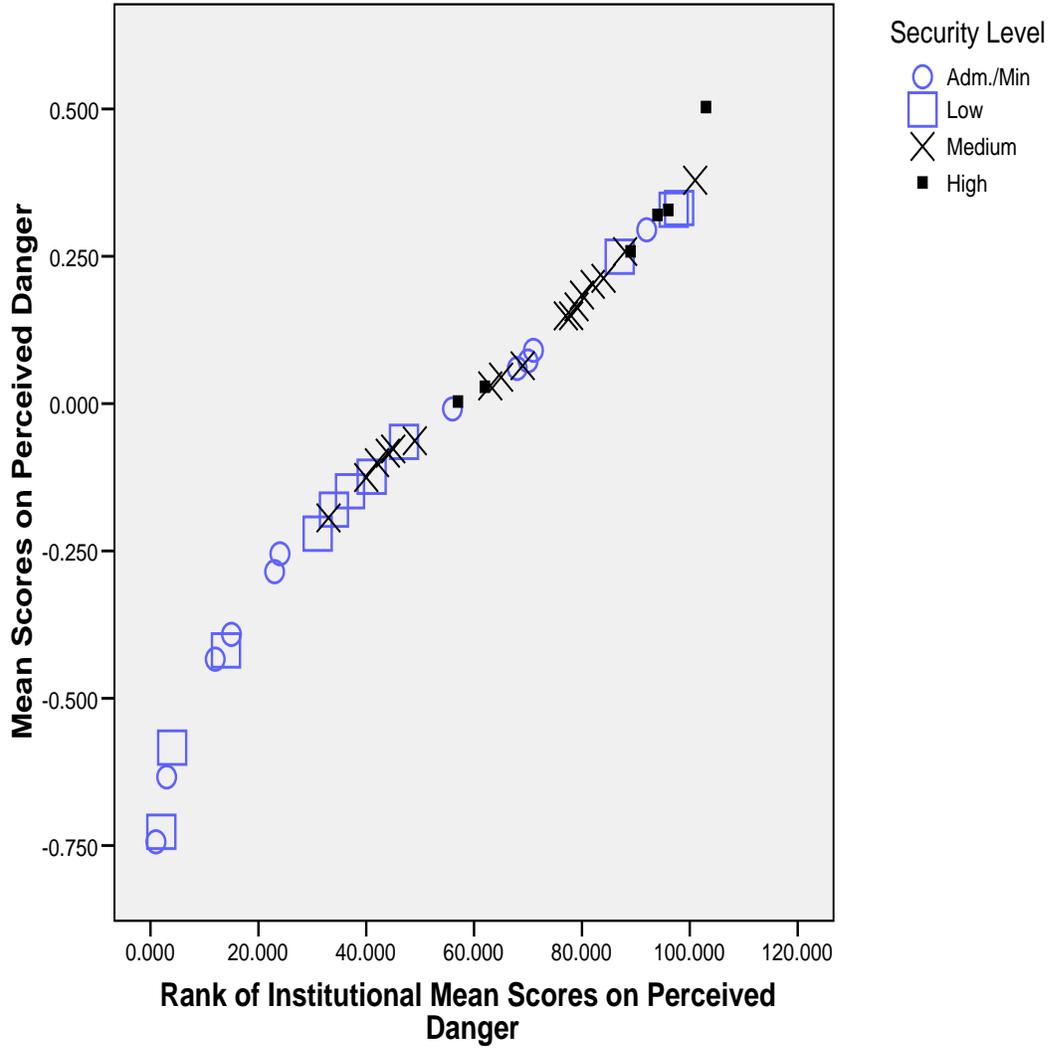
Figure 12. Scatterplot of EC Intercepts of a Random Sample of Institutions by Security Level
Note. Random half of data was used.

low security institutions had lower average levels of perceived danger. Most of the institutions with a low security level appeared in the lower half of the group of institutions, as shown by their position on the left of the x axis. There were a few low security institutions (n=3), however, in the upper half of institutions on perceived danger.

Medium security institutions had scores on perceived danger that roughly fell evenly into the top and bottom halves of the sorted institutions. Finally, all but one of the high security institutions had means placing them in the top half of the sorted institutions. Further, the top scoring institutions on perceived danger were all classified high security. This graph, though merely descriptive, suggests that as security level increases, so did the average perception of danger.

Figure 13 shows contrasts between a random sample of institutions located in the east, west, versus central region. It looks like in both regions there were low, medium, and high scoring institutions.

HLM Models

An initial HLM Analysis of Variance (ANOVA) showed a significant amount of variation on perceived danger, 15.8%, between institutions ($x^2 = 649.53$, p < .001).

HLM Models: Gender and Race/Ethnicity Variables

Series 1: Individual Level Variables with Job Satisfaction and Job Stress

This section describes the models which used gender and the race/ethnicity variables. Job satisfaction and job stress were included at both the individual and institutional levels. Model 1 (Table 7) examined the individual-level effects of demographic and organizational climate variables.
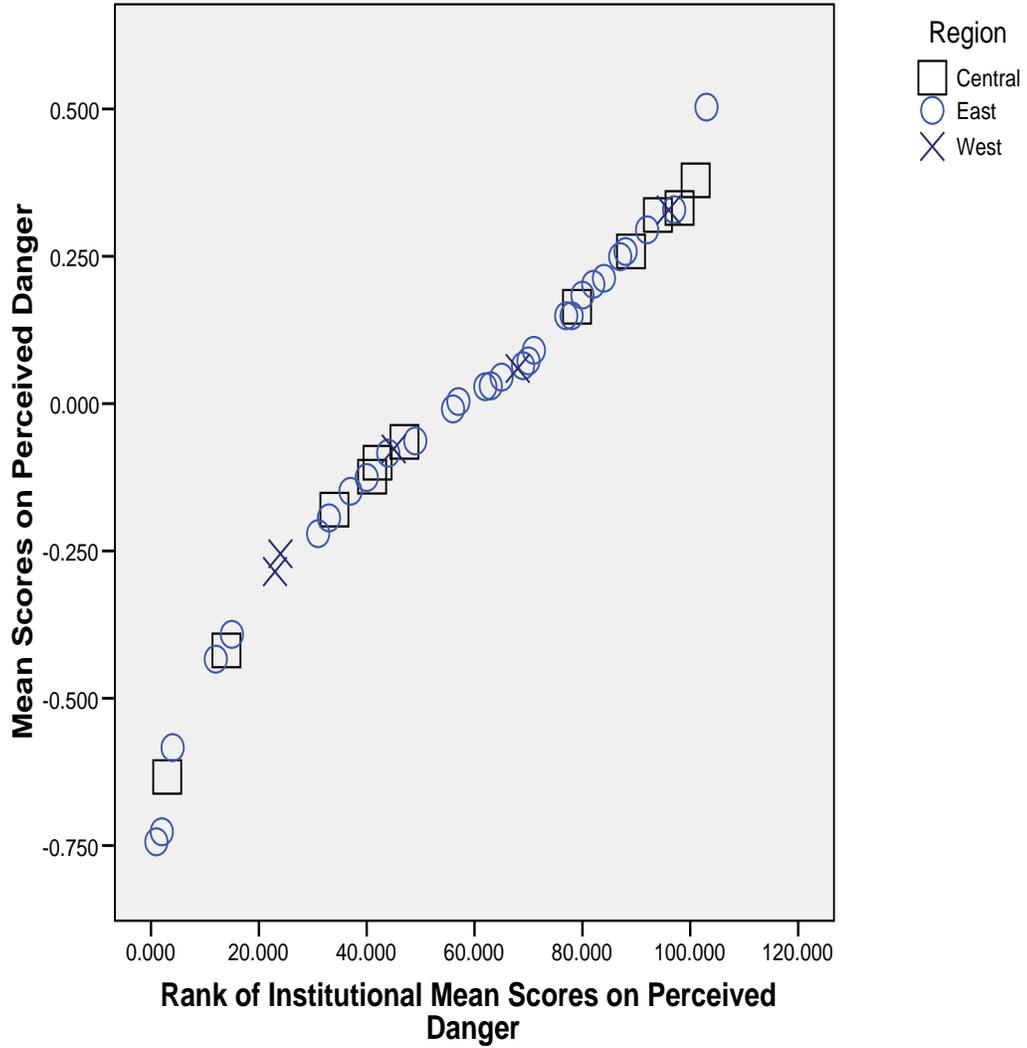
Figure 13. Scatterplot of EC Intercepts of a Random Sample of Institutions by Geographical Region

Table 7. HLM Models Predicting Perceived Danger using Gender and Race/Ethnicity

	Model 1	Model 2	Model 3
Individual-level			
Intercept	-0.040	-0.042	-0.042
	(0.036)	(0.036)	(0.036)
Female	0.241***	0.231***	0.236***
	(0.040)	(0.041)	(0.040)
African-American	0.225***	0.266***	0.280***
	(0.041)	(0.040)	(0.041)
Hispanic	0.147**	0.136*	0.155**
	(0.057)	(0.053)	(0.052)
Af.Am / Hispanic	0.071	0.043	0.103
	(0.242)	(0.218)	(0.223)
Education	0.053	0.050	0.057
	(0.030)	(0.030)	(0.030)
Age	0.005*	0.004*	0.005*
	(0.002)	(0.002)	(0.002)
Tenure	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)
Organizational Clarity	-0.238***	-0.159***	-0.095**
	(0.032)	(0.032)	(0.031)
Supervisory Support	-0.049	-0.071*	-0.054
	(0.029)	(0.028)	(0.029)
Perceived Assaults	-	0.176***	0.169***
		(0.014)	(0.014)
Job Satisfaction	-	-	-0.053*
			(0.022)
Job Stress	-	-	0.114***
			(0.021)
Model R^2			
Level 1	0.081	0.146	0.159

Table 7. (continued)

	Model 4	Model 5	Model 6
Institutional-level			
Intercept	-0.045	-0.046	-0.045
	(0.025)	(0.021)	(0.020)
East	-0.079	-0.064	-0.052
	(0.058)	(0.053)	(0.049)
West	-0.186*	-0.165*	-0.136**
	(0.077)	(0.068)	(0.069)
Low Security	-0.056	0.043	0.064
	(0.076)	(0.078)	(0.079)
Medium Security	0.144$^+$	0.095	0.128*
	(0.074)	(0.068)	(0.060)
High Security	0.464***	0.217*	0.231**
	(0.105)	(0.095)	(0.077)
Proportion Female	-1.015***	-0.736*	-0.655*
	(0.282)	(0.291)	(0.291)
% African-American	0.527***	0.463***	0.590***
	(0.124)	(0.113)	(0.123)
% Hispanic	0.699***	0.577***	0.582***
	(0.155)	(0.147)	(0.144)
Average Education	0.138	0.277	0.315
	(0.281)	(0.245)	(0.224)
Avg. Age	-0.015	-0.006	-0.010
	(0.013)	(0.010)	(0.009)
Avg. Job Tenure	0.027	0.011	0.011
	(0.017)	(0.017)	(0.016)
Avg. Co-Worker Support	-1.018***	-0.587*	-0.437
	(0.291)	(0.278)	(0.292)
Avg. Effectiveness	-0.089	0.076	0.177
	(0.189)	(0.157)	(0.178)
Avg. Perceived Assaults	-	0.297***	0.262***
		(0.055)	(0.055)
Avg. Job Satisfaction	-	-	0.107
			(0.160)
Avg. Job Stress	-	-	0.467**
			(0.138)
% L2 Variance Explained	62.32	75.54	78.01
% Total Variance Explained	23.17	25.47	25.62
Remaining L2 Variation	< 0.001	< 0.001	< 0.001

Note. Unstandardized coefficients, standard errors in parentheses. For model 4, 5, And 6, same variables shown in (respectively) models 1, 2, and 3 remained in model. Coefficients not shown since they were unchanged from models 1, 2, and 3 due to group mean centering. N respondents = 2,954; N institutions = 106.
$^+$ $p < .06$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Four of the six demographic variables included in Model 1 (Table 7) significantly affected perceived danger. Those officers perceiving more danger than other officers in the same institution were women (B = 0.241, p < .001), African-Americans (B = 0.225, p < .001), Hispanics (B = 0.147, p < .01), and those older (B = 0.005, p < .05) than the average officer.

Impacts of the dummy coded variables (female, African-American, Hispanic, African-American and Hispanic) describe contrasts between the group in question (e.g., female officers) and male, non-African-American, non-Hispanic officers scoring at their institutional average on age, tenure, and social climate variables. These impacts align with previous research showing these same variables describe officers who are more stressed and less satisfied. Also, results support the idea that differences observed in earlier work with state and local facilities apply as well to Federal correctional officers.

Turning to impact of organizational climate, organizational clarity affected perceived danger in the expected direction (B = -0.238, p < .001). Those officers perceiving a more transparent organizational structure compared to other officers in the same institution perceived less danger. Since the indicator was group mean centered, this result confirms that varying perceptions of different officers in the same organization drive differences in perceived danger. This result, in the expected direction, extends the earlier work on organizational climate by suggesting that perceptions of danger may influence behavioral and attitudinal outcomes related to organizational structure.

An additional variable was included in the model (Model 2) which measured the individual officers' perception of physical force (perceived assaults) against staff in the previous 6 months. Perceived assaults affected perceived danger (B = 0.176, p < .001) in

the expected direction. Those officers perceiving more inmate-on-staff assaults in the previous 6 months perceived more danger. This results supports research on fear of crime which suggests that the when fear of risk is high, a variety of attitudinal and behavioral reactions may occur. In this case, officers perceiving that they are at risk of being assaulted by inmates react by perceiving more danger in the workplace (see Ferraro, 1995 for further discussion).

The demographics included in the model remain consistent: women, African-Americans, Hispanics, and older than average officers perceive more danger. The addition of perceived assaults mediates the effect of organizational clarity by 33%. Organizational clarity plays a role in driving perceptions of danger but the role is modest. Supervisory support became significant in this model. Those officers perceiving more support from their administrative supervisors report less perceived danger (B = -0.071, p < .05). The importance of supervisory support in this model suggests that organizational climate indicators may indirectly affect perceived danger through their risk of assaults. Organizational clarity plays a role in driving perceptions of danger but the role is modest.

Job satisfaction and job stress were added to Model 3 (Table 7). Job satisfaction and job stress were significant correlates of perceived danger. Those more satisfied than fellow officers perceived less danger (B = -0.053, p < .05); those reporting more job stress reported more danger (B = 0.114, p < .001). The addition of job satisfaction and stress reduced the influence of organizational clarity by 40%. Job satisfaction and job stress reduced supervisory support to non significance (B = -0.054, NS). Supervisory support may correlate with perceived danger only indirectly through job satisfaction and job stress. Perceived assaults remains significant (B = 0.169, p < .001).

Institutional-level Variables

Models 4 - 6 included institutional-level variables. Because the individual-level variables were group-mean centered, their effect sizes and significance levels were not changed in models 4 - 6. Only institutional-level effects are shown in the tables and discussed.

Geographic region, institutional security level, aggregate demographic and climate variables were added to Model 4 (Table 7). Region and security level mattered. Institutions in the western region had lower average perceived danger (B = -0.186, p < .05) than those in the reference string of institutions with average scores on the other non-dummy level 2 predictors. High (B = 0.464, p < .001) and medium (B = 0.144, p < .06) security institutions had higher perceived danger than those in the reference string with average scores on the non-dummy institutional predictors. The significant impact of region and security level supports previous research in job satisfaction, job stress, and inmate misconduct. The theoretical relevance of these results is unclear.

Turning to demographics, institutions with a proportion of female officers higher than the sample average had lower perceived danger (B = -1.015, p < .001). A higher proportion of female officer's leads to a one unit decrease below the institutional grand mean. This suggests that the increased presence of women in the institution makes all officers, including males, feel safer. Female officers may provide a certain sense of calmness in the institution which may only be felt only when their numerical representation is increased. This was opposite of the effect found at the individual-level. Figure 14 displays the relationship between proportion female and perceived danger. As
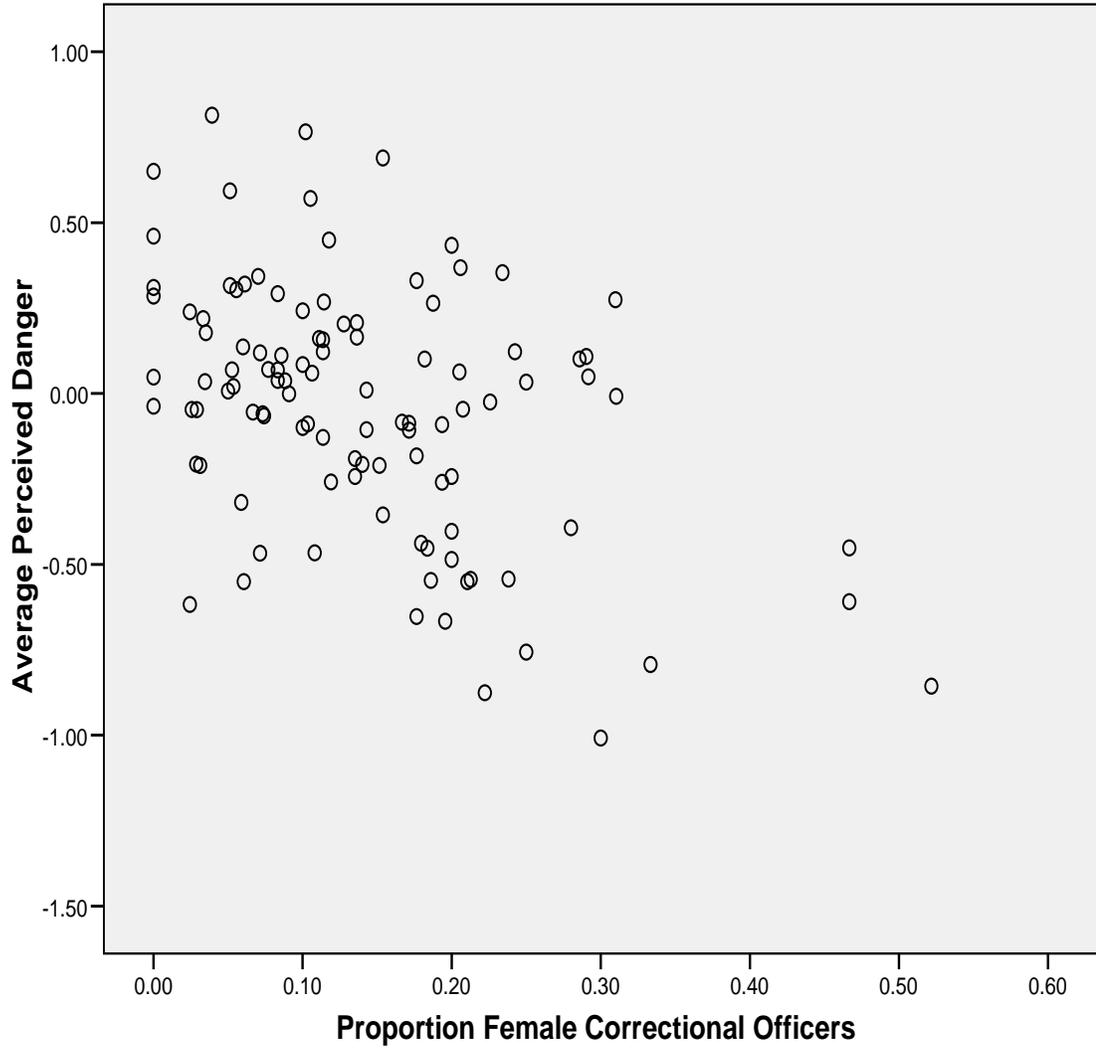
Figure 14. Scatterplot of Institutional-level Bivariate Relationship between Average Perceived Danger and Proportion Female Correctional Officers

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shown, there was a clear, negative bivariate relationship between the two institutional

variables.

Additional analyses were completed which examined the relationship between

perceived danger and proportion female divided into quartiles. Figure 15 displays this

relationship. As shown, perceptions of danger among female correctional officers

remained consistent even as the proportion of female officers increased. On the other

hand, perceptions of danger among male officers significantly decreased as the presence

of female officers in that institution increased.

Race effects at the institutional level emerged which were consistent with

individual effects. Institutions with percentages of African-American (B = 0.527, p<

.001) or Hispanic (B = 0.699, p < .001) officers above the sample average had higher

average perceived danger. The increased presence of African-American officers and

Hispanic officers elevates perceptions of danger for all officers in a given institution. This

may suggest that the generic model of the white male correctional officers is still

standard. The presence of minorities as professionals and not inmates may not be

welcome just yet.

Additional exploratory analysis examined the relationship between the average

job tenure of white officers and perceived danger. It was assumed that institutions with

more tenured white officers would report higher than average perceived danger as the

percent of African-American and Hispanic officers increased. White officers with longer

tenure would be those most likely to see the slow increase of minorities as officers which

would result in less trust for their increasingly different co-workers. Though the

relationship between perceived danger and the racial composition of officers was not
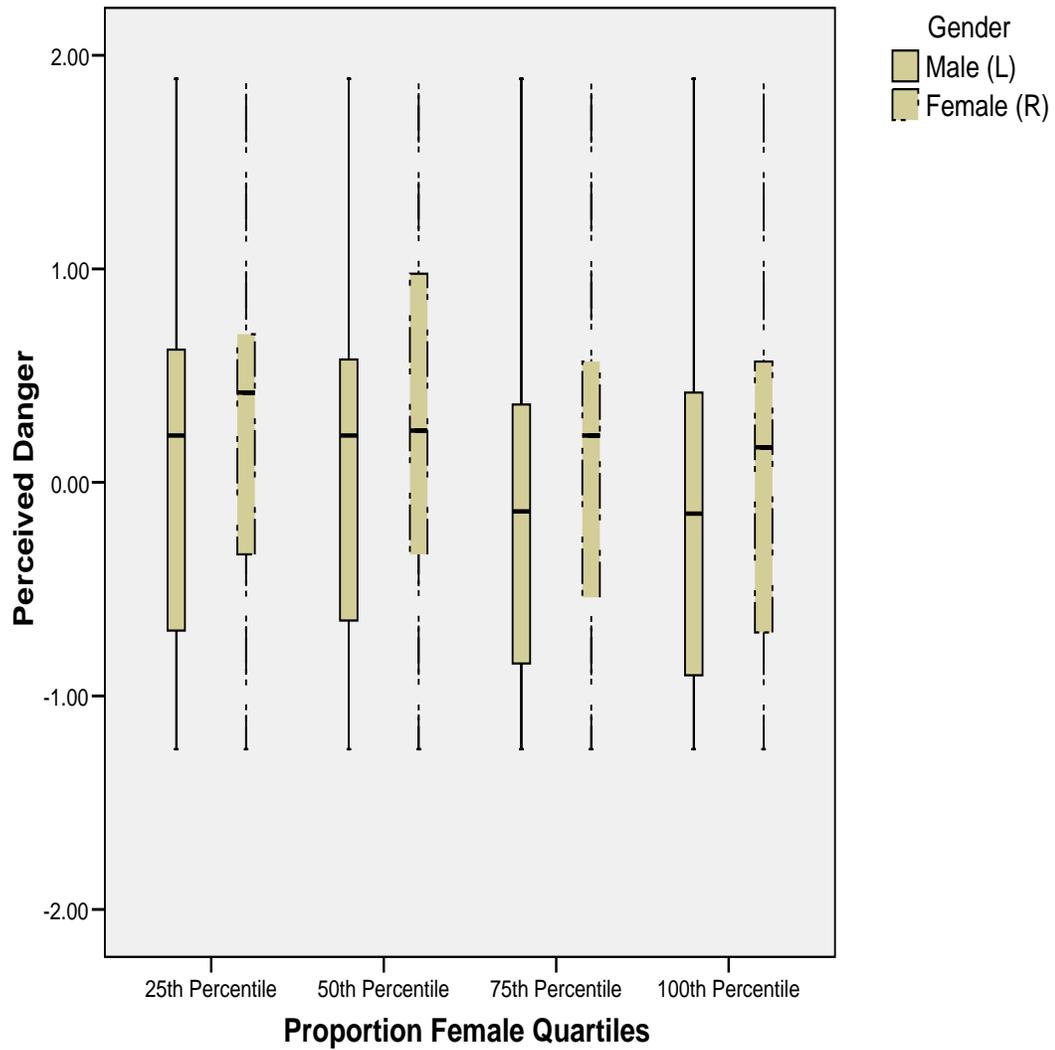
Figure 15. Box-and-Whisker Plot: Perceived Danger and Proportion Female Correctional Officers Quartiles by Gender

readily apparent, it appears that short-term officers, or those with fewer than 7 years on the job, were responsible for increasing their institutions average perceived danger (see Figures 16 and 17). Short-term officers may be more confident when working with others like themselves. The increased presence of minorities makes them the 'other' and therefore more fearful and less trusting of the institution and possibly, their co-workers.

For average organizational climate variables, only average co-worker support correlated with higher average perceived danger. As expected, institutions with levels of average co-worker support above the sample average had lower average perceived danger (B = -1.018, p < .001). It appears that although organizational climate does matter at both the officer and institutional level, different processes are suggested at the two levels because different elements of organizational climate have been pinpointed.

The significant chi-squared value (x^2 =351.11, p < .001) showed significant between-institution variation remained after adding the institutional predictors shown in Model 4.

Average perceived assaults were added to Model 5 (Table 7) and remained a significant predictor in the model (B = 0.297, p < .001). Several results remained significant: percent African-American, percent Hispanic, western region, and high security level. The introduction of aggregate perceived assaults mediated the impact of high security by 50% though the coefficient remained significant. Average perceived assaults reduced medium security to non significance.

Average perceived assaults reduced the effect of proportion female correctional officers (B= -0.736, p < .05) by 28% and the effect of average co-worker support by 42% (B = -0.587, p < .05).

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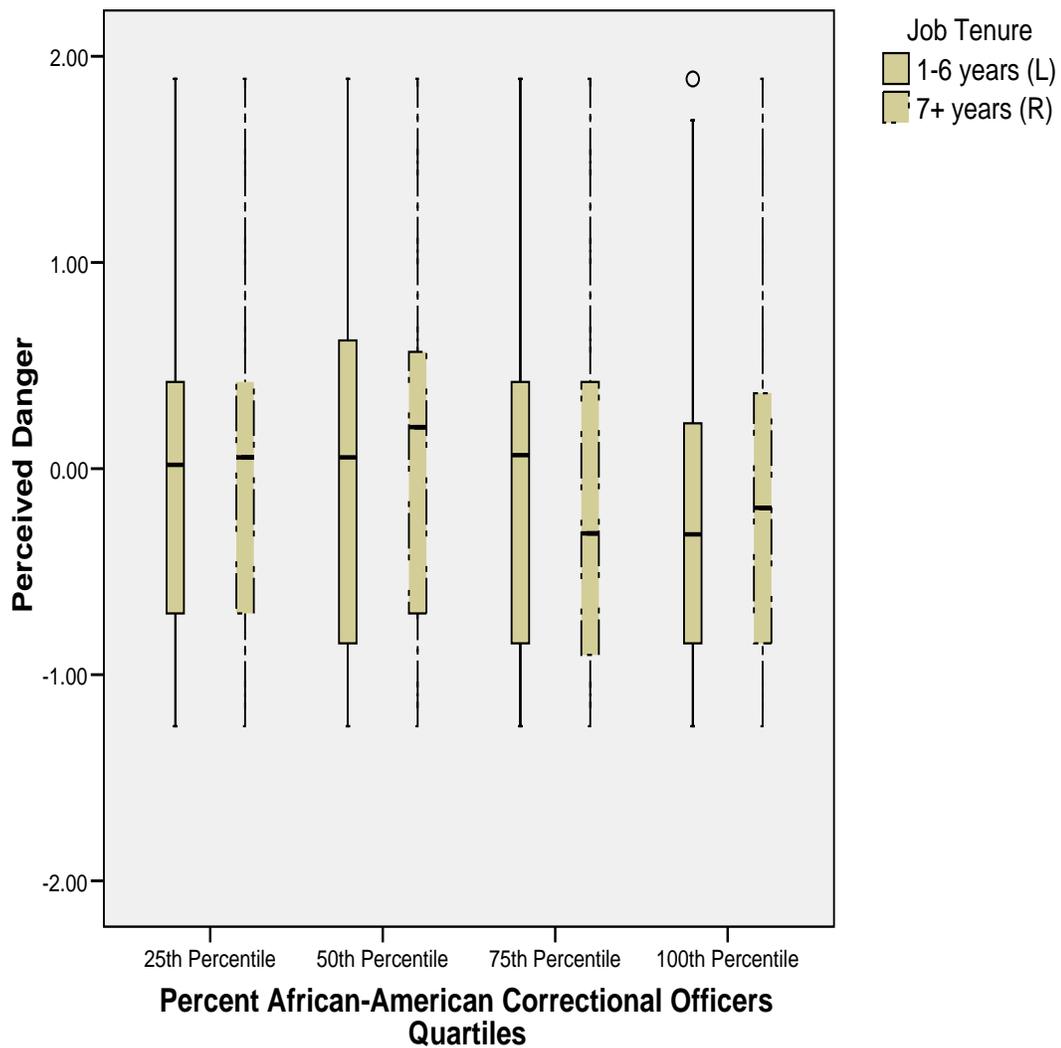
Figure 16. Box-and-Whisker Plot: African-American Quartiles and
Average Perceived Danger Clustered by Tenure (Short-Term vs. Long-Term)
for White Officers
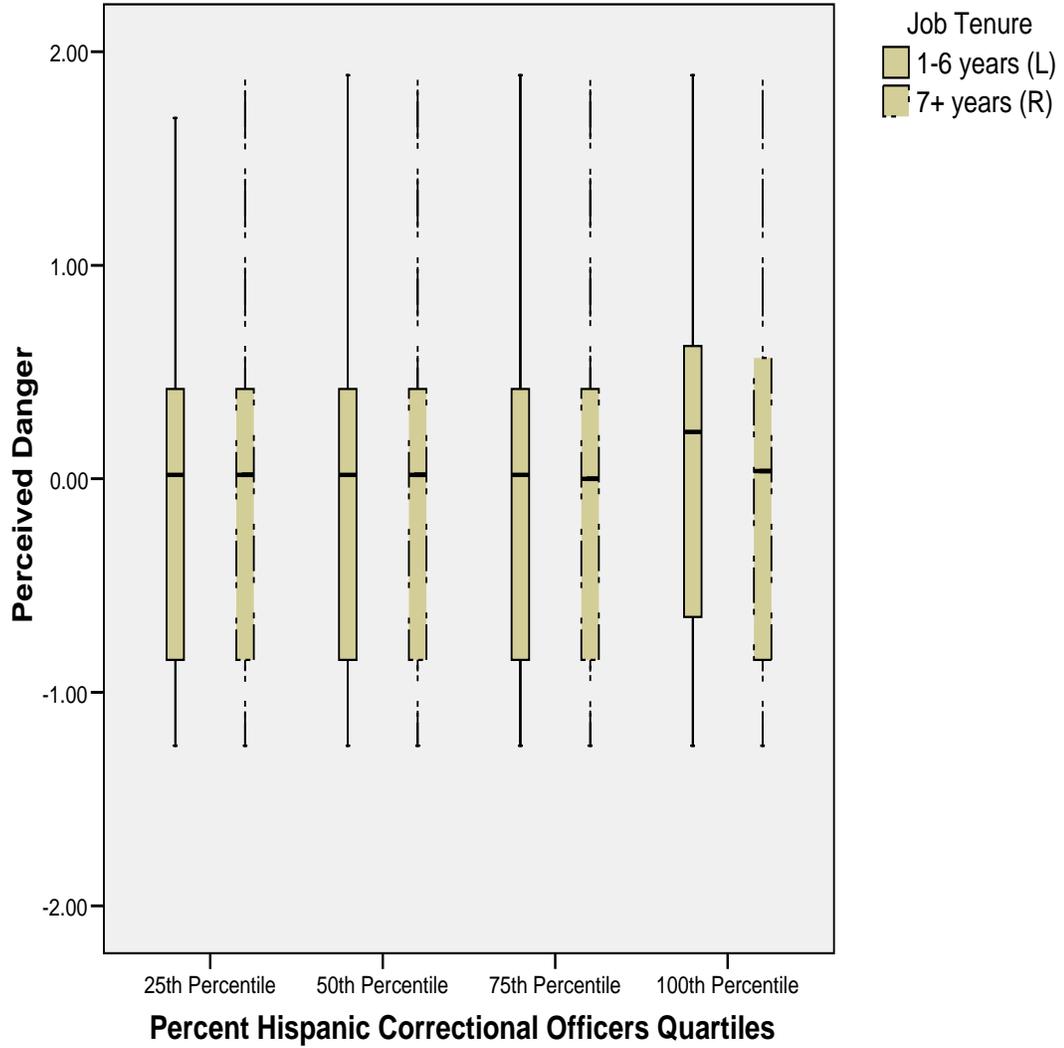
Figure 17. Box-and-Whisker Plot: Hispanic Quartiles and
Average Perceived Danger Clustered by Tenure (Short-Term vs. Long-Term)
for White Officers

Remaining between-institution differences on perceived danger were still

significant (x^2 = 263.57, p < .001). A final model, Model 6, introduced aggregate job

satisfaction and aggregate job stress to help explain remaining differences.

Results from Model 6 (Table 7) remained generally consistent. Proportion female

officers, percent African-American, percent Hispanic, and the effect of region continue to

affect perceived danger. Medium security became important in this model. Medium

security institutions had higher average perceived danger (B = 0.128, p < .05). Medium

security may correlate with average perceived danger only directly through average job

satisfaction and average job stress. Institutions with more stressed officers had higher

average perceived danger (B = 0.467, p < .01). Job satisfaction and job stress reduced co-

worker support to non significance (B = -0.437, NS).

The amounts of total variance explained by the model are shown in Table 7. Prior

to the inclusion of institutional-level predictors, the R^2 for level 1 was .16. In other words,

sixteen percent of level 1 variation was explained. When institutional-level predictors

were entered into the models, the R^2 was 0.73. Twenty-five percent of total model

variance was explained. There remained between-institution differences on perceived

danger (x^2 = 235.470, p < .001).

Summary

Perceptions of danger among Federal correctional officers varied significantly.

Those most likely to perceive danger were: female, African-American, Hispanic, and

individuals older than the average officer. Officers who perceived more assaults against

staff perceived more danger. The addition of perceived assaults mediated the impact of

several variables which suggests that the predictors are related to perceived danger only indirectly, through similar views about their risk of assaults.

Perceptions of danger were reduced when officers perceived clearer communication within the prison organization, were less stressed and reported more satisfaction.

Turning to the institutional-level, there was a consistent race effect. Institutions with percentages of African-American officers or Hispanic officers above the sample average had higher average perceived danger. There was an opposite effect of gender. Institutions with a higher proportion of female officers had lower average perceived danger. The latter finding corresponds with ethnographic accounts of correctional officers, specifically, that women provide a calming and nurturing effect on institutional climate (Zupan, 2000). Current work does not, however, aid in explaining why the presence of women reduce perceived danger for all involved.

Security level and region matter. One social climate indicator, average co-worker support reduced average perceived danger. Average perceived assaults reduced average perceived danger. Again, the predictor mediated the effect of key predictors which suggests average perceived assaults influences processes across institutions. There was a multi-level, positive effect of average stress. The influence of average co-worker support influences average perceived danger but may be associated to perceived danger indirectly through average job satisfaction and average job stress.

The pattern of results suggests that differences between officers and between institutions influence perceived danger. Remaining variation between institutions may help make clear relationships not captured in these analyses.

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Residual Analysis

Institutional-level residuals were saved after Model 6. Empirical Bayes residuals indicate the amount of deviation of the EB estimate from the predicted value (see Raudenbush & Bryk, 2002). A probability-probability (P-P) plot of the institutional residuals from model 6 using job satisfaction and job stress are shown in Figure 18. The plot supports the normality of the level 2 residuals.

Figure 19 displays a probability-probability plot (P-P) of the residual dispersions for the institutional sample (n = 106). These values represent the log of the standard deviation of the residuals after HLM has fit its best model (Raudenbush & Bryk, 2002). The plot shows the residuals are normally distributed.

HLM Models: Gender Isolation and Racial Isolation Variables

Series 1: Individual-level Variables with Job Satisfaction and Job Stress

A series of HLM models used substituted gender isolation and racial isolation for individual level gender and race indicators. These variables capture the degree of isolation for work groups: women, men, African-Americans, and non-African-Americans. For this set of models with race/ethnicity and gender captured at the work group level, individual gender and race/ethnicity variables were excluded. The order of entry for all paralleled the model series described above.

Model 1 (Table 8) described the influence of demographic and organizational climate variables on perceived danger. Groups of female officers in institutions where they were a smaller fraction of all officers reported more perceived danger (B = 0.499, p < .001). The coefficient captures the predicted fear difference between women working at an institution with all female officers and men working at an institution with all male

103
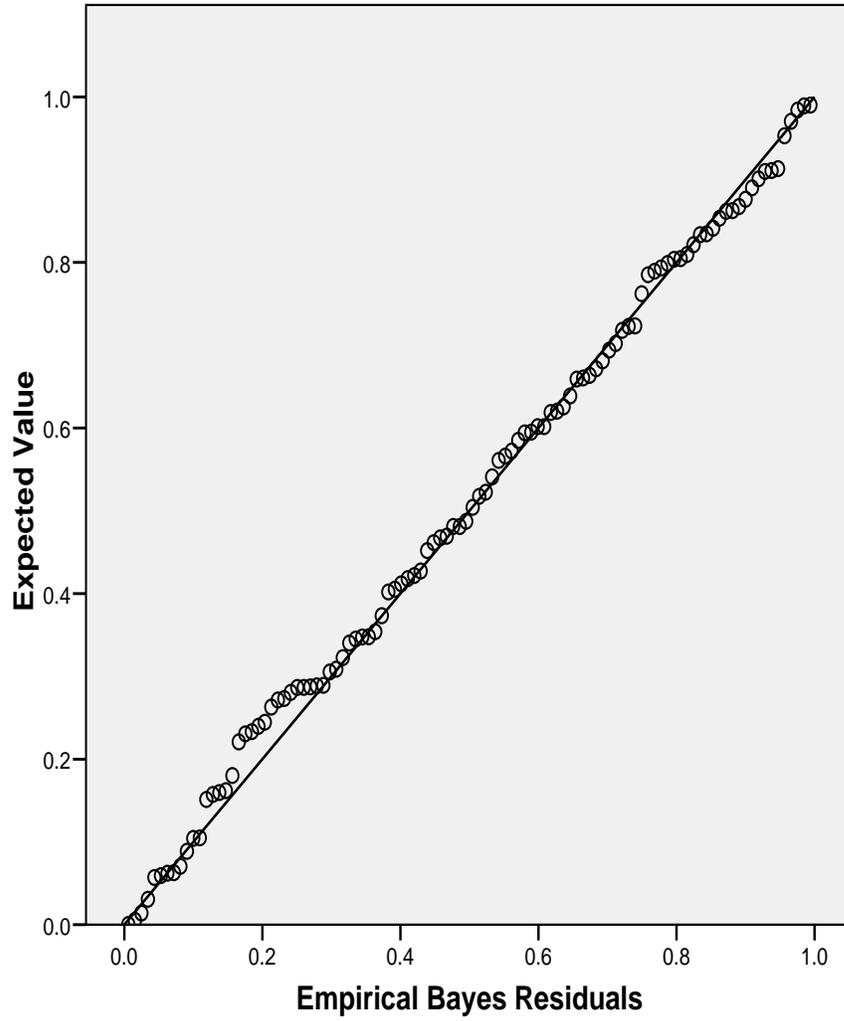
Figure 18. Probability Plot: Institutional Residuals from Gender and Race/Ethnicity Model 6 using Job Satisfaction and Job Stress

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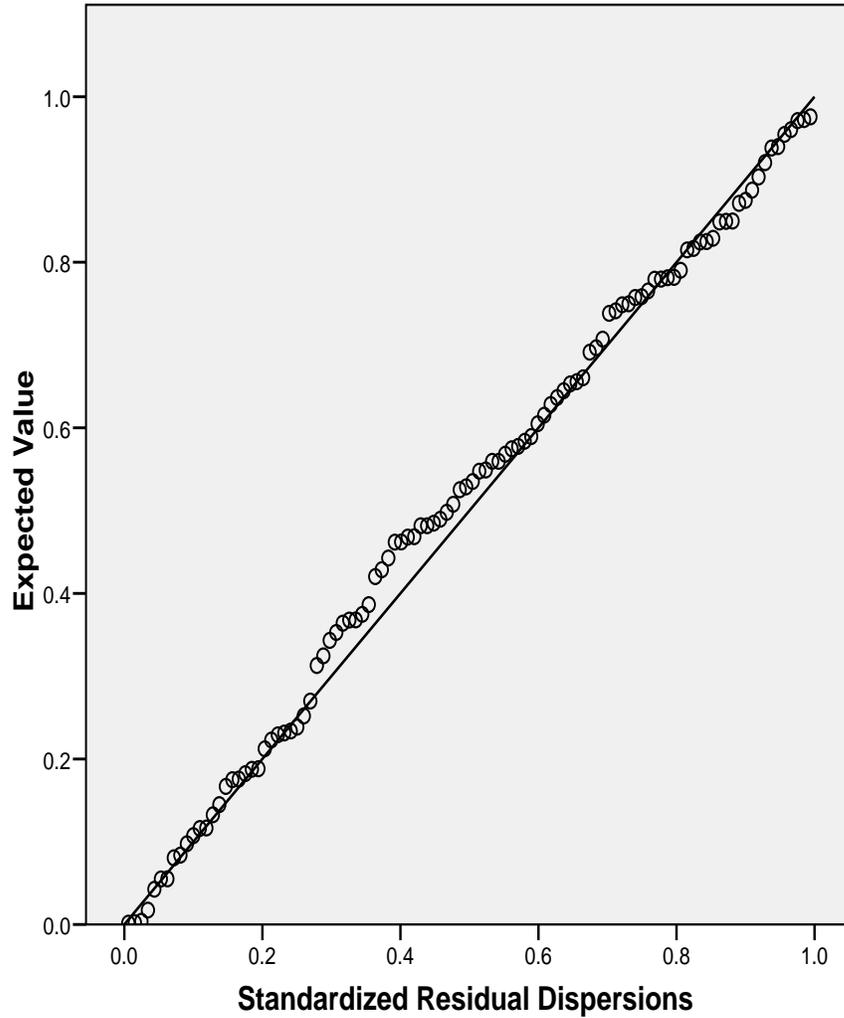
Figure 19. Probability Plot of Residual Dispersions for
106 Federal Institutions from Gender and Race/Ethnicity
Model 6 using Job Satisfaction
and Job Stress

Table 8. HLM Models Predicting Perceived Danger using Gender Isolation and Racial Isolation

	Model 1	Model 2	Model 3
Individual-level			
Intercept	-0.040	-0.041	-0.042
	(0.036)	(0.036)	(0.036)
Gender Isolation	0.499***	0.487***	0.500***
	(0.077)	(0.076)	(0.074)
Racial Isolation	0.180	0.273*	0.274*
	(0.116)	(0.119)	(0.121)
Education	0.050	0.047	0.054
	(0.031)	(0.030)	(0.030)
Age	0.005*	0.004	0.005*
	(0.002)	(0.002)	(0.002)
Tenure	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)
Organizational Clarity	-0.231***	-0.152***	-0.090**
	(0.032)	(0.032)	(0.032)
Supervisory Support	-0.052	-0.074**	-0.055
	(0.029)	(0.028)	(0.029)
Perceived Assaults	-	0.174***	0.168***
		(0.014)	(0.014)
Job Satisfaction	-	-	-0.062**
			(0.214)
Job Stress	-	-	0.101***
			(0.021)
Model R^2	0.070	0.132	0.145

Table 8. (continued)

	Model 4	Model 5	Model 6
Institutional-level			
Intercept	-0.045	-0.045	-0.045
	(0.025)	(0.021)	(0.020)
East	-0.078	-0.064	-0.052
	(0.058)	(0.053)	(0.049)
West	-0.185*	-0.164*	-0.136*
	(0.077)	(0.068)	(0.069)
Low Security	-0.056	0.043	0.064
	(0.076)	(0.078)	(0.079)
Medium Security	0.144$^+$	0.095	0.128*
	(0.074)	(0.068)	(0.060)
High Security	0.464***	0.218*	0.231**
	(0.105)	(0.095)	(0.077)
Proportion Female	-1.013***	-0.735*	-0.653*
	(0.282)	(0.291)	(0.291)
% African-American	0.526***	0.462***	0.590***
	(0.124)	(0.113)	(0.123)
% Hispanic	0.699***	0.577***	0.582***
	(0.155)	(0.147)	(0.144)
Average Education	0.138	0.278	0.316
	(0.281)	(0.245)	(0.224)
Avg. Age	-0.015	-0.006	-0.010
	(0.013)	(0.010)	(0.009)
Avg. Job Tenure	0.027	0.012	0.011
	(0.017)	(0.017)	(0.016)
Avg. Co-Worker Support	-1.019***	-0.588*	-0.438
	(0.291)	(0.278)	(0.292)
Avg. Effectiveness	-0.088	0.076	0.178
	(0.189)	(0.157)	(0.178)
Avg. Perceived Assaults	-	0.297***	0.262***
		(0.055)	(0.055)
Avg. Job Satisfaction	-	-	0.107
			(0.160)
Avg. Job Stress	-	-	0.467***
			(0.138)
% L2 Variance Explained	62.53	75.73	78.20
% Total Variance Explained	21.95	24.02	24.39
Remaining L2 Variance	< .001	< .001	< .001

Note. Unstandardized coefficients, standard errors in parentheses. For model 4, 5 and 6, same variables shown in (respectively) models 1, 2, and 3 remained in model. Coefficients not shown since they were unchanged from models 1, 2, and 3 due to group mean centering. N respondents = 2,954; N institutions = 106.
$^+$p < .06, *p< .05, ** p < .01, *** p < .001.

officers. The indicator provides insight into how demographic similarities or dissimilarities may impact behaviors and attitudes in the workplace.

A sole organizational climate variable influenced perceived danger. Those officers perceiving less danger perceive clearer communication within the organization (B = -.0.231, p < .001), and are older than the average officer (B = 0.005, p < .05).

An important departure from the first set of models using gender and race/ethnicity was the impact of race. When African-Americans are a smaller fraction of all officers in an institution, they report more perceived danger. Racial isolation failed to have a significant impact (B = 0.180, NS). As a work group predictor, racial isolation considers perceptions of danger for all African-American officers. It is likely that danger varies considerably for this group.

Perceived assaults were added to Model 2 (Table 8). The risk of assault affected perceived danger in the expected direction. Officers who perceived more assaults than the average officer in that institution reported higher perceived danger (B = 0.174, p < .001). The effect of being female and organizational clarity remains consistent (p < .001). Perceived assaults mediated the impact of organizational clarity by 34%. In addition, supervisory support became significant in this model. Officers perceiving more support from their administrative supervisors report low perceived danger (B = -0.074, p < .05) which was also consistent with the previous model. Age was reduced to non significance (B = 0.004, NS).

Racial isolation became significant in this model. Groups of African-American officers in institutions where they were a smaller fraction of all officers report more perceived danger (B = 0.273, p < .05). The importance of racial isolation in the model

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suggests demographics such as race indirectly affect perceived danger through their risk of assaults.

Save for the effect of racial isolation, and age, results from the initial two models parallel results from the models which used gender and race/ethnicity variables. It appears that regardless of how gender and race were operationalized, they continue to affect danger in the expected direction. Job satisfaction and job stress were added to Model 3. Job satisfaction and job stress were significant correlates of perceived danger. Officers who reported more job satisfaction than the average officer at their institution perceived less danger (B = -0.062, p < .01). Those reporting more than average stress perceived more danger (B = 0.101, p < .001).

Although organizational clarity remained significant, its impact was reduced by 41%. Job Satisfaction and job stress reduced the impact of supervisory support to non significance (B = -0.055, NS). Supervisory support may be correlated with perceived danger only indirectly through job satisfaction and job stress.

Aggregate demographic and institutional characteristics were added starting in Model 4. The corresponding individual-level variables were retained. Coefficients were not changed because they were group mean centered.

The effect of region, security level, demographic predictors (proportion female, percent African-American, percent Hispanic) and one organizational climate, average co-worker support, variable affect perceived danger in the expected direction. The results parallel those from the first series of models using gender and race/ethnicity variables.

Average perceived assaults were entered into Model 5 and remained a consistent predictor of perceived danger (B = 0.297, p < .001). Institutions perceiving more average

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assaults had higher average perceived danger. The effect of region, percent African-American, and percent Hispanic were maintained. The addition of perceived assaults mediated the impact of high security level (53%), proportion female (27%), and co-worker support (42%). Similar to the first series of models, medium security became non significant.

When average job satisfaction and average job stress were included in the model, the effect of co-worker support was reduced to non significance. Though the effect of co-worker support was modest, its role in predicting perceived danger was completely mediated through job satisfaction and job stress. Region and aggregate demographics remained significant. Medium security became significant in this model (B = 0.128, p < .05).

The R^2 for level 1 (Models 1 - 3) was .12; twelve percent of level 1 variation was explained prior to adding institutional-level predictors. When institutional-level predictors were entered into the models, the R^2 increased to .73; seventy-three percent of total level 2 variance was explained (Models 4 - 6). In total, 25% of total model variance was explained (R^2=.25). There remained between-institution differences on perceived danger ($x^2 = 231.73$, p < .001).

<div align="center">Summary</div>

Results from the models which substituted gender isolation and racial isolation for gender and race/ethnicity paralleled the first series of models. There was a consistent gender and race effect at the work group and institutional level. Groups of female and African-American officers in institutions where they were a smaller fraction of all

officers reported more perceived danger. The same was true for African-American officers. In institutions where they are a minority group, they report more danger.

Those institutions with a proportion of female officers higher than the sample average had lower average perceived danger. Institutions with a percentage of African-American and Hispanic officers higher than the sample average had higher average perceived danger. . These results parallel the first series of models; demographic dissimilarities affect perceived danger at the work group level as well as among individual officers.

Those officers reporting more danger were older than the average officer, reported more stress, and perceived themselves to be at risk of assault. Those who perceived clear communication within the organization, more autonomy, and felt more satisfied reported lower perceived danger. As seen earlier, perceived assaults mediated the impact of several predictors suggesting that it plays a key role in generating perceived danger.

Results at the institutional-level paralleled earlier results. Security level and geographic region matter. Although the impact of average co-worker support was reduced by perceptions of assaults, it remained significant. Institutions with officers reporting higher average co-worker support had lower average perceived danger. There was a multi-level effect of perceived assaults. Institutions with officers perceiving themselves to be at risk of assaults had higher average perceived danger.

Average co-worker support was completely mediated by average job satisfaction and average job stress; the role of co-worker support plays a role in how officers perceived danger yet the role was modest. There was a multi-level effect of stress;

institutions with officers reporting more average job stress had higher average perceived danger.

Through the use of gender isolation and racial isolation, important differences between work groups emerge. Institutional-level results parallel earlier findings of gender and race/ethnicity. These analyses support the presence of a tri-level effect of gender and race among Federal correctional officers.

Residual Analysis

Institutional-level residuals (Empirical Bayes residuals) were saved after Model 6. Empirical Bayes residuals indicate the amount of deviation of the EB estimate from the predicted value (see Raudenbush & Bryk, 2002). Figure 20 displays a probability-probability (P-P) plot of the institutional residuals from the full model using gender isolation and racial isolation and job satisfaction and job stress. Residuals appear normally distributed as expected.

Figure 21 displays a probability-probability (P-P) plot of the residual dispersions for the institutional sample. The values are the log of the standard deviation of the residuals once HLM has fit its best model. The values appear normally distributed as expected.

HLM Varying Slopes Model Series 1a: Gender and Race/Ethnicity Variables

The next series of models investigated the results when theoretically selected individual-level variables were allowed to have random coefficients (varying slopes) rather than one fixed slope. Given the directional ambiguity between perceived danger

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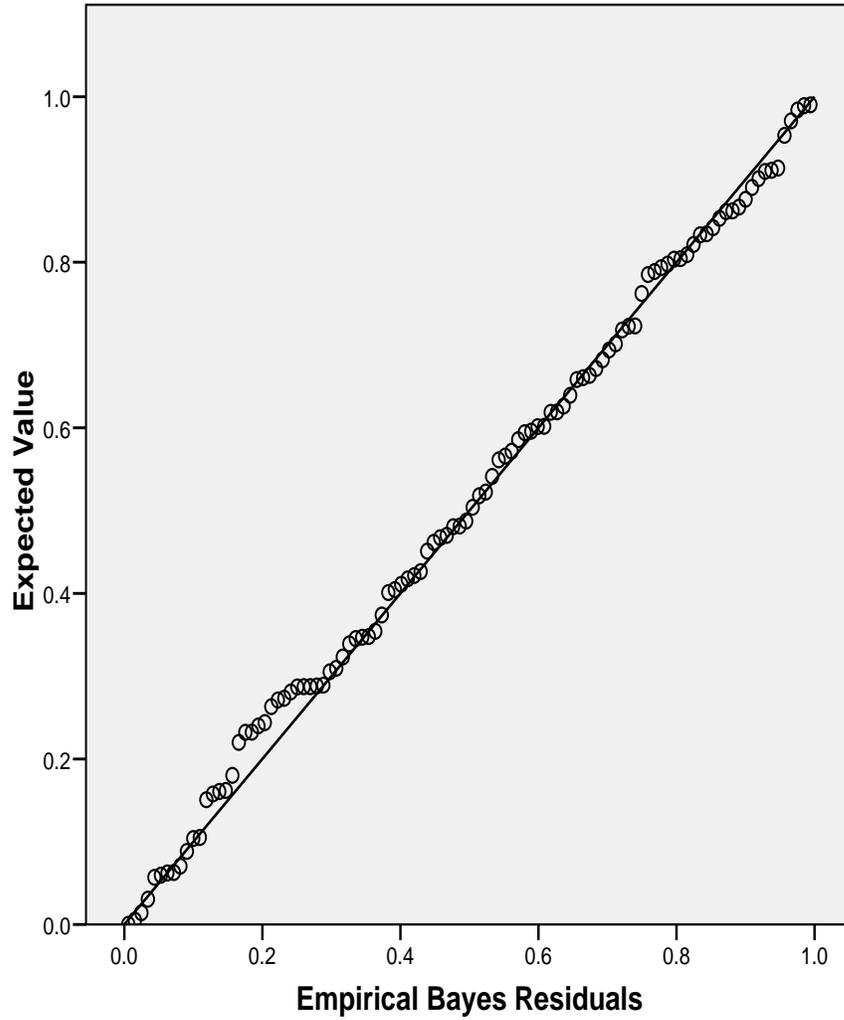
Figure 20. Probability Plot: Institutional Residuals from
Gender Isolation and Racial Isolation Model 6
using Job Satisfaction and Job Stress
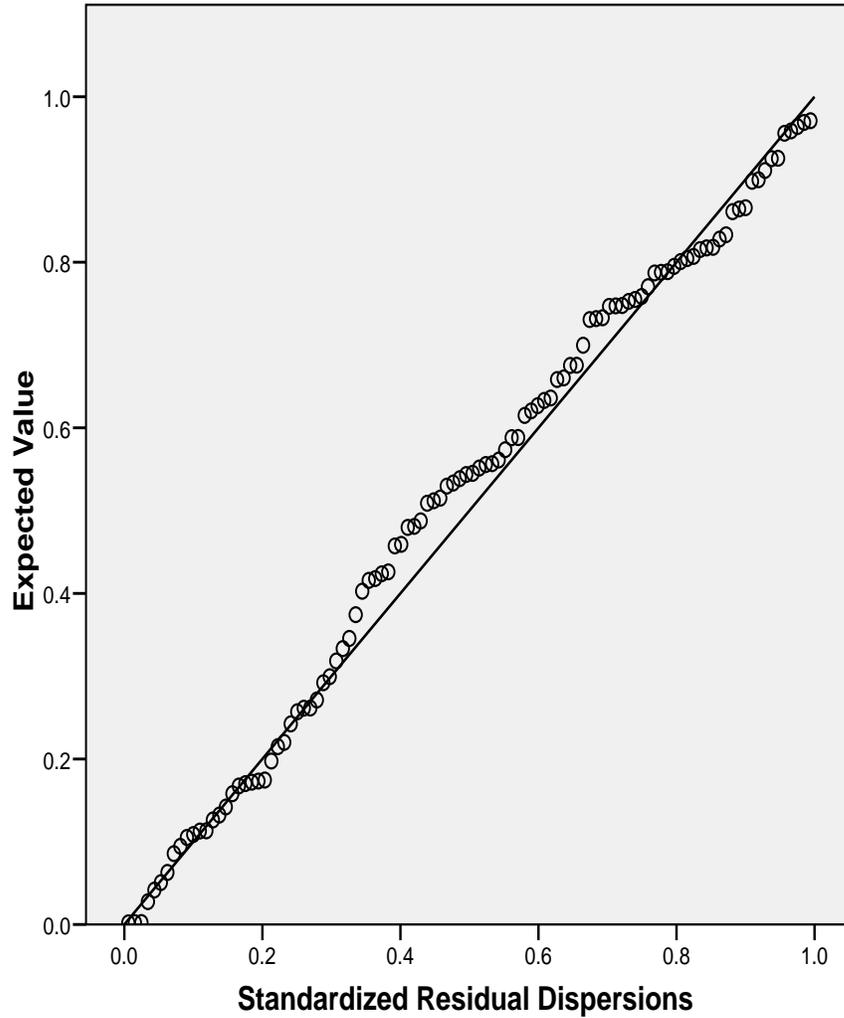
Figure 21. Probability Plot of Residual Dispersions for
106 Federal Institutions for Full Isolation Model including
Job Satisfaction and Job Stress

and the two predictors stress and satisfaction, these random coefficient models excluded these two from the predictor set.

The slope of gender and supervisory support were allowed to vary suggesting that the impact of the two predictors would matter more in some institutions than others. If varying slopes appeared, it was expected that the effect of gender and supervisory support would weaken in institutions with stronger social support. As the examination of varying slopes was exploratory, an alpha level of .10 was used.

In Model 1, the slope of female was allowed to vary (Table 9). The variation in the slope for female, however, were non significant ($x^2 = 85.46$, p > .500). The slope was thus fixed in subsequent models in the series.

The slope of supervisory support was allowed to vary in Model 2. These variations were significant ($x^2 = 128.18$, p < .10); supervisory support had more of an impact on perceived danger in some institutions than in others. The reliability of the slopes of supervisory support was 0.18. The reliability estimate of the slopes answers the question "How reliable are the slopes based on computing the OLS regression separately for each institution?" (Raudenbush & Bryk, 2002). Slope estimates are less reliable due to small variation in the true slope across institutions and the slopes are estimates with less precision (Raudenbush & Bryk, 2002).

It was expected that average co-worker support would influence the slope of supervisory support. Supervisory support would be weaker in institutions where officers reported stronger average co-worker support. Average co-worker support was entered into Model 3 but failed to have a significant impact (B = 0.166, NS).

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Table 9. Varying Slopes Models Predicting Perceived Danger using Gender and
Race/Ethnicity

	Model 1	Model 2	Model 3	Model 3a
Individual-level				
Intercept	-0.042	-0.042	-0.042	-0.042
	(0.036)	(0.036)	(0.036)	(0.036)
Female	0.230***	0.232***	0.232***	0.233***
	(0.040)	(0.041)	(0.041)	(0.041)
African-American	0.265***	0.265***	0.264***	0.265***
	(0.040)	(0.040)	(0.040)	(0.040)
Hispanic	0.138**	0.134*	0.133*	0.134*
	(0.053)	(0.053)	(0.053)	(0.053)
Af.Am / Hispanic	0.052	0.037	0.036	0.036
	(0.216)	(0.220)	(0.220)	(0.220)
Education	0.049	0.049	0.048	0.049
	(0.030)	(0.030)	(0.029)	(0.029)
Age	0.004*	0.004^{++}	0.004^{++}	0.004^{++}
	(0.002)	(0.002)	(0.002)	(0.002)
Tenure	-0.003	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)
Organizational Clarity	-0.160***	-0.157***	-0.156***	-0.155***
	(0.032)	(0.032)	(0.032)	(0.032)
Supervisory Support				
Base	-0.071*	-0.072*	-0.072*	-0.073*
	(0.028)	(0.028)	(0.028)	(0.029)
Co-Worker Support	-	-	0.166	-
			(0.326)	
% African-American	-	-	-	0.159^{+}
				(0.091)
Perceived Assaults	0.176***	0.176***	0.176***	0.176***
	(0.014)	(0.014)	(0.014)	(0.014)

Random Effect	*Variance Component*	X^2	*p <value*
Gender	0.01	85.46	> .50
Sup. Support (Model 2)	0.01	128.18	< .10
Sup. Support (Model 3)	0.01	127.58	< .10
Sup. Support (Model 3a)	0.01	124.52	< .10

Table 9. (continued)

	Model 4	Model 5
Institutional-level		
Intercept	-0.045	-0.045
	(0.025)	(0.021)
East	-0.080	-0.065
	(0.058)	(0.053)
West	-0.185*	-0.164*
	(0.077)	(0.069)
Low Security	-0.054	0.043
	(0.075)	(0.078)
Medium Security	0.148*	0.097
	(0.074)	(0.068)
High Security	0.467***	0.220*
	(0.105)	(0.094)
Proportion Female	-1.004***	-0.730*
	(0.282)	(0.292)
% African-American	0.534***	0.467***
	(0.123)	(0.112)
% Hispanic	0.695***	0.574***
	(0.156)	(0.148)
Average Education	0.151	0.285
	(0.279)	(0.244)
Avg. Age	-0.014	-0.005
	(0.013)	(0.010)
Avg. Job Tenure	0.027	0.012
	(0.017)	(0.017)
Avg. Co-Worker Support	-1.013***	-0.585*
	(0.293)	(0.277)
Avg. Effectiveness	-0.085	0.077
	(0.188)	(0.157)
Avg. Perceived Assaults	-	0.296***
		(0.054)
% L2 Variance Explained	55.17	69.19
% Total Variance Explained	21.90	24.14
Remaining L2 Variance	< .001	< .001

Note. Unstandardized coefficients, standard errors in parentheses. For model 4, and 5, same variables shown in (respectively) models 1, 2, and 3a remained in model. Coefficients not shown since they were unchanged from models 1, 2, and 3a due to group mean centering. N respondents = 2,954; N institutions = 106.
[+]p < .10, [++]p < .06, * p < .05, ** p < .01, *** p < .001.

An exploratory analysis of the possible predictors affecting the slopes of supervisory support was done. Results showed that percent African-American moderated the slope of supervisory support (B = 0.159, p < .10). As the percent of African-American officers increased in an institution (see Figure 22), the dampening effect of supervisory support was weakened. To put it another way, the slope of supervisory support was stronger in institutions where the composition of officers was mostly white.

This cross-level effect of race, though exploratory and of marginal significance, suggests that supervisory support has a weak impact on perceived danger with an increased presence of African-American officers. Figure 23 displays the relationship between the percent of African-American officers and the percent of African-American supervisors in an institution. There is no clear relationship which suggests that the majority of supervisors are white. The weakened impact of supervisory support could be related to a racial mismatch between officers and supervisors.

The slope of supervisory support was allowed to vary in the remaining models. Demographics, organizational climate predictors and institutional-level characteristics were entered into Models 4. Average perceived assaults were added into Model 5.

<center>Residual Analysis</center>

Institutional-level residuals were saved after Model 5. Empirical Bayes residuals indicate the amount of deviation of the EB estimate from the predicted value (see Raudenbush & Bryk, 2002). A probability-probability (P-P) plot of the institutional residuals from the varying slopes model (model 5) are shown in Figure 24. The plot supports the normality of the level 2 residuals.
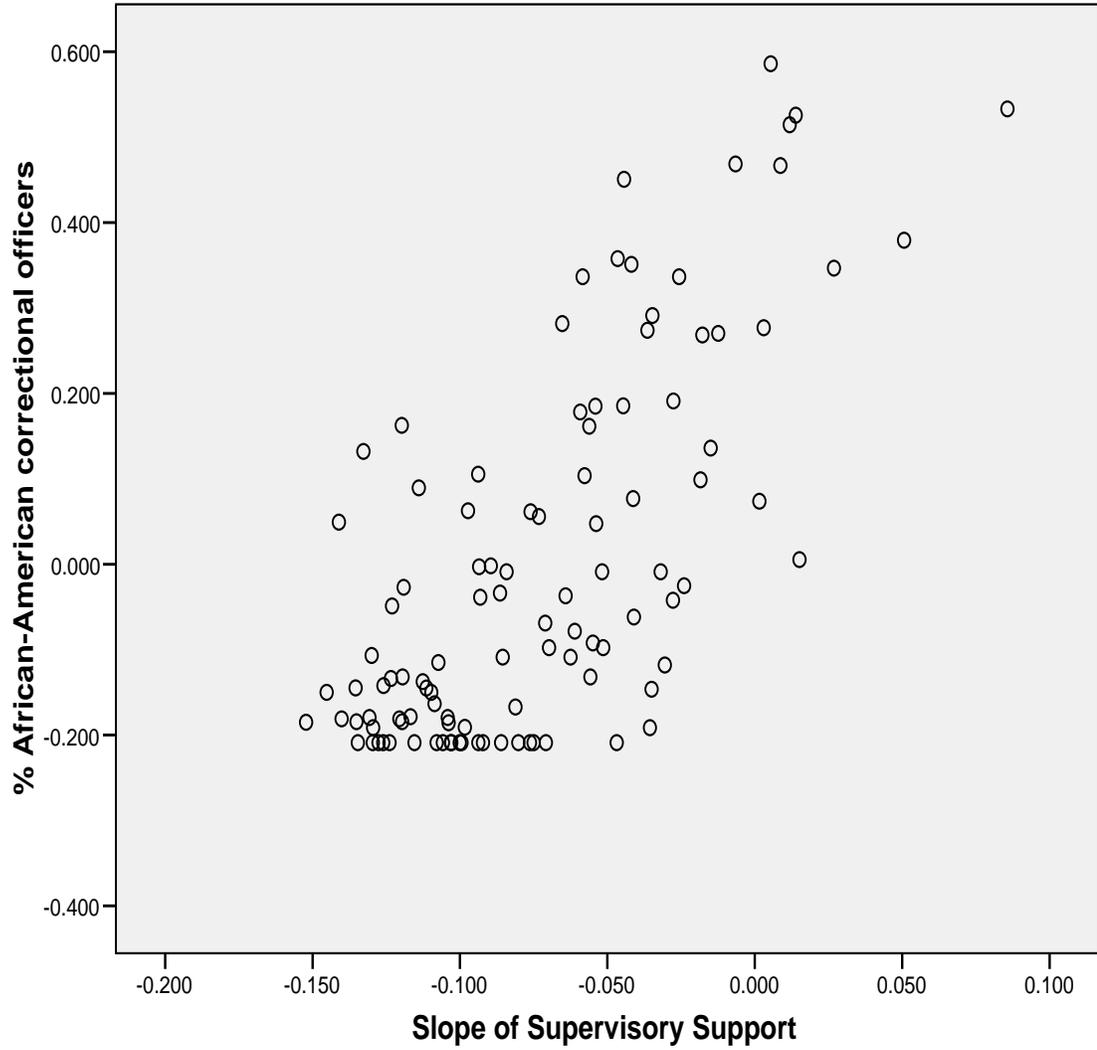
<center>118</center>

Figure 22. Scatterplot of the Slopes of Supervisory Support
(n = 106) and Percent African-American Correctional Officers
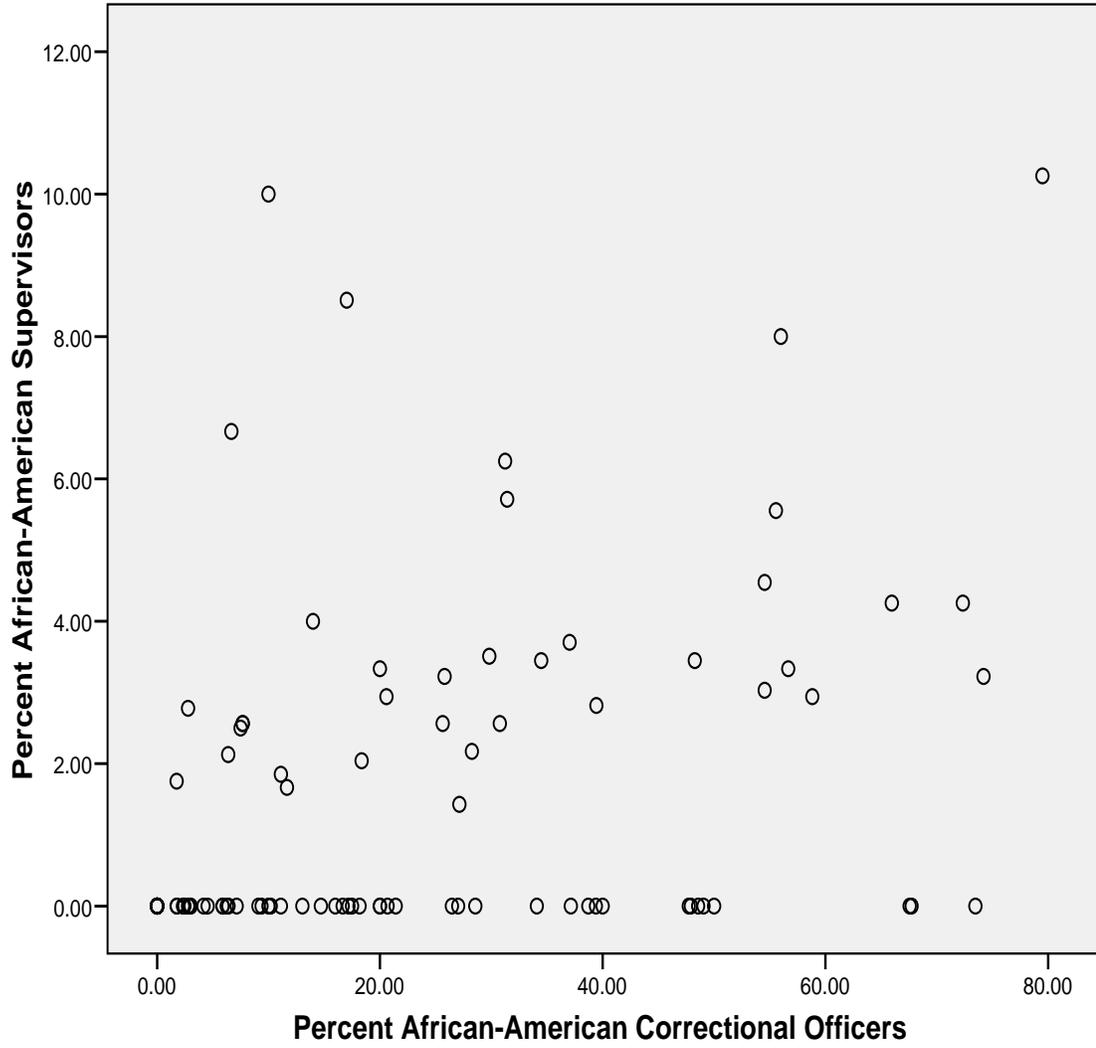
Figure 23. Scatterplot of Percent African-American Correctional Officers and Percent African-American Supervisors
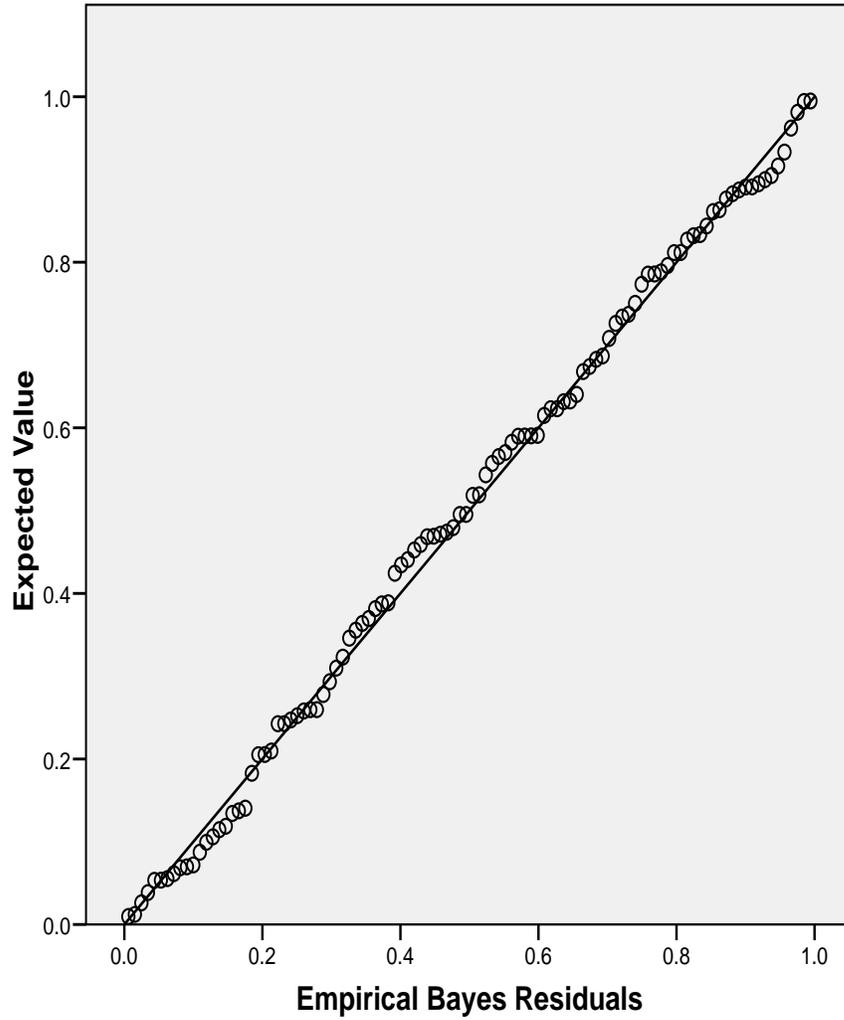
Figure 24. Probability Plot: Institutional Residuals from
Gender and Race/Ethnicity Model 5
with Varying Slopes

Figure 25 displays a probability-probability (P-P) plot of the residual dispersions for the 106 institutions. These values reflect the log of the standard deviation of the residuals after HLM has fit its best model. The values appear normally distributed as expected.

HLM Varying Slopes Model Series 1a: Gender Isolation and Racial Isolation

The following series of models repeats the analyses seen in Table 9 but the only difference is that the two theoretically slopes, gender and supervisory support, were allowed to vary.

In Model 1, the slope of female isolation was allowed to vary but the variation in the slopes was non significant ($x^2 = 87.55$, p > .500), so a fixed slope was retained in later models (see Table 10).

The slope of supervisory support was allowed to vary in Model 2. Slopes varied significantly ($x^2 = 127.39$, p < .10); within-institution differences in supervisory support mattered more in some institutions than in others. Aggregate co-worker support, however, failed to explain these differential impacts (B = 0.221, NS).

An exploratory analysis of the possible predictors affecting the slopes of supervisory support was completed. Results showed that percent African-American mediated the slope of supervisory support (B = 0.151, p < .10). As the percent of African-American officers increased in an institution, the diminishing effect of supervisory support was weakened. The slope of supervisory support has strong impact in institutions where the composition of officers was mostly white. This finding was similar to results from the varying slopes model using gender and race/ethnicity variables.
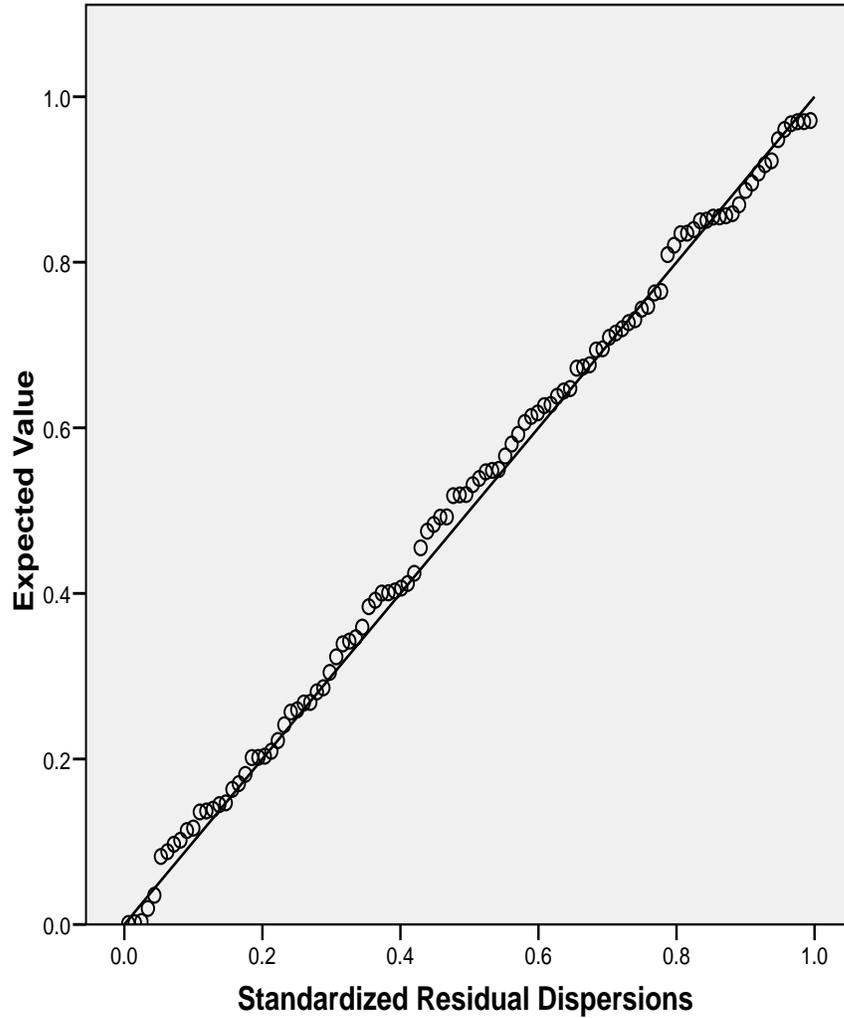
Figure 25. Probability Plot of Residual Dispersions for
106 Federal Institutions for Gender and Race/Ethnicity
Model 5 with Varying Slopes

Table 10. Varying Slopes Models Predicting Perceived Danger using Gender Isolation
and Racial Isolation

	Model 1	Model 2	Model 3	Model 3a
Individual-level				
Intercept	-0.041	-0.041	-0.041	-0.041
	(0.036)	(0.036)	(0.036)	(0.036)
Gender Isolation	0.476***	0.488***	0.489***	0.489***
	(0.076)	(0.076)	(0.076)	(0.076)
Racial Isolation	0.272*	0.271*	0.271*	0.270*
	(0.118)	(0.118)	(0.118)	(0.118)
Education	0.046	0.046	0.045	0.046
	(0.030)	(0.030)	(0.030)	(0.030)
Age	0.004	0.004	0.004	0.004
	(0.002)	(0.002)	(0.002)	(0.002)
Tenure	-0.003	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)
Organizational Clarity	-0.152***	-0.149***	-0.148***	-0.148***
	(0.032)	(0.032)	(0.032)	(0.033)
Supervisory Support				
Base	-0.074**	-0.076**	-0.076**	-0.077**
	(0.028)	(0.028)	(0.028)	(0.029)
Co-Worker Support	-	-	0.221	-
			(0.328)	
% African-American	-	-	-	0.151^{+}
				(0.092)
Perceived Assaults	0.174***	0.173***	0.173***	0.174***
	(0.014)	(0.014)	(0.014)	(0.014)

Random Effect	Variance Component	X^2	$p <$
Gender Isolation	0.01	87.55	> 0.50
Sup. Support (Model 2)	0.01	127.39	< 0.10
Sup. Support (Model 3)	0.01	126.48	< 0.10
Sup. Support (Model 3a)	0.01	123.99	< 0.10

Table 10. (continued)

	Model 4	Model 5
Institutional-level		
Intercept	-0.045	-0.045
	(0.025)	(0.021)
East	-0.080	-0.064
	(0.058)	(0.053)
West	-0.185*	-0.164*
	(0.077)	(0.068)
Low Security	-0.055	0.043
	(0.075)	(0.078)
Medium Security	0.147*	0.095
	(0.074)	(0.068)
High Security	0.467***	0.219*
	(0.105)	(0.094)
Proportion Female	-1.003***	-0.733*
	(0.282)	(0.292)
% African-American	0.533***	0.464***
	(0.123)	(0.113)
% Hispanic	0.696***	0.576***
	(0.156)	(0.148)
Average Education	0.149	0.280
	(0.279)	(0.244)
Avg. Age	-0.014	-0.006
	(0.013)	(0.010)
Avg. Job Tenure	0.027	0.012
	(0.017)	(0.017)
Avg. Co-Worker Support	-1.012***	-0.587*
	(0.293)	(0.278)
Avg. Effectiveness	-0.086	0.077
	(0.188)	(0.157)
Avg. Perceived Assaults	-	0.296***
		(0.054)
% L2 Variance Explained	55.41	69.44
% Total Variance Explained	20.96	23.20
Remaining L2 Variance	< .001	< .001

Note. Unstandardized coefficients, standard errors in parentheses. For model 4, and 5, same variables shown in (respectively) models 1, 2, and 3a remained in model. Coefficients not shown since they were unchanged from models 1, 2, and 3a due to group mean centering. N respondents = 2,954; N institutions = 106.
[+] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Results from subsequent models paralleled those which used the gender and race/ethnicity variables. Region, high security level, aggregate demographics, and one aggregate organizational climate predictor, average co-worker support, continued to affect perceived danger in the expected direction.

Residual Analysis

Institutional-level residuals were saved after Model 5. Empirical Bayes residuals indicate the amount of deviation of the EB estimate from the predicted value (see Raudenbush & Bryk, 2002). A probability-probability (P-P) plot of the institutional residuals from the varying slopes model 5 are shown in Figure 26. The residuals are normally distributed.

Figure 27 displays a probability-probability (P-P) plot of residual dispersions for the institutional sample. These values represent residual standard deviation from the final fitted model. These values appear normally distributed.

Outline of Key Findings from Multi-level Models

In summary, these analyses of perceived danger among Federal correctional officers provided insight into how perceived danger varied within institutions and across institutions. There were multi-level effects of gender and race/ethnicity. At the individual level, female officers perceived more danger than men. If females were more isolated as a group, they reported more perceived danger. At the institutional level, there was an opposite effect of gender. In institutions with a proportion of female officers higher than the sample average, all officers report lower average perceived danger. African-American officers and Hispanic officers perceive more danger than white officers. If African-American officers were a smaller work group proportionally, they reported more
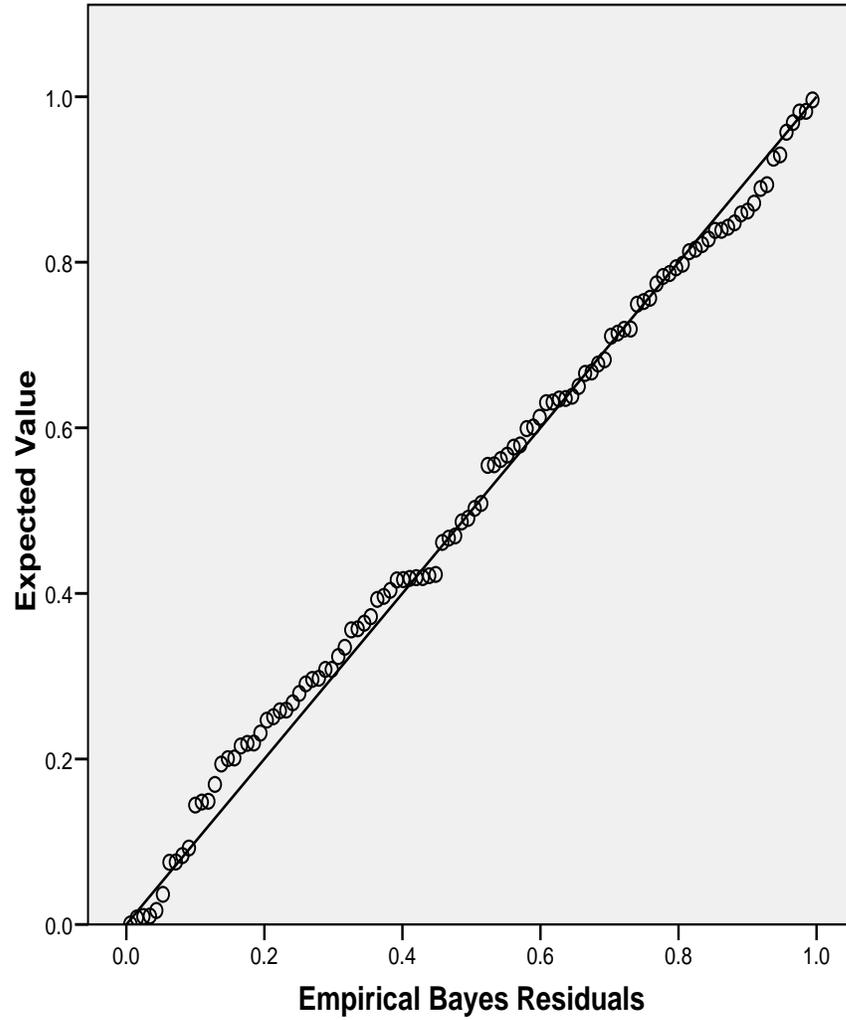
126

Figure 26. Probability Plot: Institutional Residuals from
Gender Isolation and Racial Isolation Model 5
with Varying Slopes
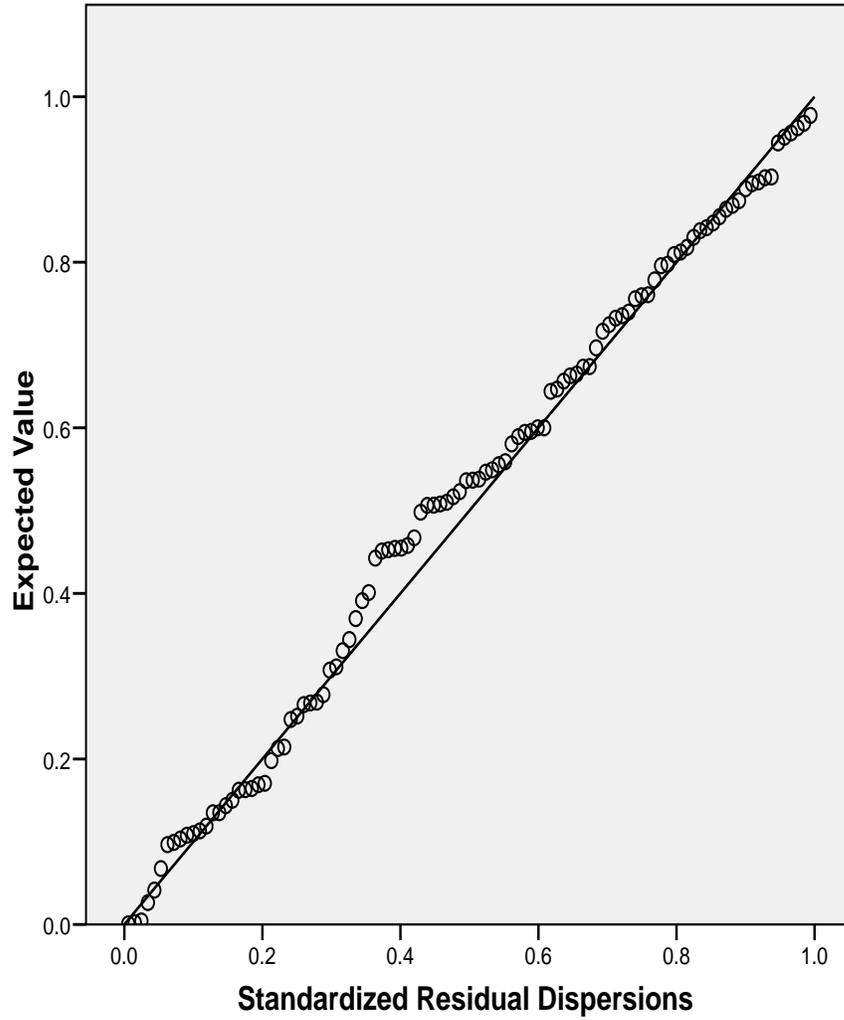
Figure 27. Probability Plot of Residual Dispersions for
106 Federal Institutions for Gender Isolation and Racial Isolation
Model 5 with Varying Slopes

perceived danger. Institutional differences in racial composition showed that institutions with proportions of African-Americans and Hispanics higher than the sample average, those institutions had higher average perceived danger. Why race impacts were consistent at the officer and institutional levels, while gender effects worked in opposite directions, will be addressed further below.

Findings on gender and race are supported in the corrections as well as a broader feminist and organizational literature. Women are thought to perceive the workplace differently due to varying levels of stress and satisfaction and work-home conflict. Similar findings have been found for racial and ethnic minorities. They are thought to experience the workplace, specifically corrections, differently due to their numerical disproportions. In general, they are more likely to report stress, dissatisfaction, and have a shorter tenure in corrections.

Organizational climate mattered but the relevant elements depended upon the level of analysis. Organizational clarity and supervisory support differences between officers reduced perceptions of danger; higher than average co-worker support reduced institutional average perceived danger. In the present study, clear communication within the organization and supervisory support reduced perceived danger for individual officers. Average co-worker support mattered at the institutional level. Average co-worker support negatively influenced average perceived danger.

High security level and region consistently correlated with average perceived danger. High security institutions and institutions located in the west as compared to the central and east regions had higher average perceived danger. The former result is intuitive; more secure institutions are more likely to house more dangerous offenders.

The regional result at this point is primarily descriptive. There is currently no theoretical basis for why perceived danger (or others like it, for example, job satisfaction) would vary by geographic region. Additional exploratory analyses are required for a more in-depth interpretation.

Job stress consistently correlated with perceived danger at both the officer and institutional levels. Given potential bidirectional relationships between this predictor and perceived danger, these connections should be interrupted with extreme caution. Job dissatisfaction was related to higher perceived danger.

There was a multi-level effect of perceived assaults: officers who perceived more assaults reported more perceived danger; and institutions that higher than average levels of perceived assaults had higher average perceived danger. Results align with research in the perceived risk and fear of crime literatures which suggest that perceptions of vulnerability and crime are casually more important than the experience of crime itself. The predictor was shown to mediate the effects of several variables which illustrated the importance of an officer's subjective reality on how they perceive danger.

Impacts of supervisory support varied across institutions, although the variation was only of marginal significance. It mattered somewhat more in some institutions than in others. Percent African-American correctional officers had a marginally significant effect on the slope of supervisory support. Supervisory support mattered somewhat more in institutions with lower proportions of African-American officers.

CHAPTER 5

DISCUSSION

The present study sought to learn more about the officer- and institutional-level correlates of perceived danger among Federal correctional officers. The study applied a conceptual model previously used by researchers for related outcomes like work stress and dissatisfaction. In addition, building on reactions to crime research, perceived risk of assault also was included at both the officer and institutional levels.

Of key interest was whether there was significant variation on the outcome across institutions. Since all these institutions were part of one Federal system, and all officers received the same standardized training, one might expect that the averages on perceived danger would not differ, especially after differences in institutional security levels were taken into account.

Demographic and organizational climate indicators were each examined at both the officer and institutional levels. No studies to date of correctional officers' perceived danger have distinguished between institutional and officer influences. The study hoped to untangle possible multilevel impacts. Specifically, were the correlates of perceived danger similar across the two levels? How were they different? This could provide insight into similar or divergent processes at the officer versus institutional levels.

The study allowed officer gender and race to each link to the outcome in multiple ways. Effects of individual officer race and gender, institutional gender and race

composition, and work group race and gender composition all were examined. The fear of crime literature (Ferraro, 1995) suggests that women, African-American and Hispanic officers all should perceive more danger. That literature (Taylor, 2001) also suggests that institutions with higher percentages of African-American and Hispanic officers would have higher average perceived danger. Work on women correctional officers suggested positive or negative impacts of proportion female officers on average perceived danger were both plausible. For work group isolation, it was expected that the more isolated female and African-American officers were as a group, the more danger they would perceive.

The following discussion will concentrate primarily on reviewing and integrating the results which pertain to the most important hypotheses. A brief discussion of less theoretically relevant results will follow. Implications for theories about correctional officers, as well as for research on reactions to crime and organizational climate, are considered as well.

<div align="center">Question of Institutional Differences</div>

A key component of the present study was how perceived danger varied across institutions in the Federal Bureau of Prisons. Fifteen percent of the total variance arose from institutional differences. There were important ecological differences in perceived danger. Because the Federal Bureau of Prisons is a unitary system of corrections with a single set of policies, procedures, and training guidelines, it was plausible to expect no institutional-level differences on perceived danger. Those average differences remained significant and substantial even after controlling for differences in institutional security levels.

This ecological patterning is comparable to work on fear of crime among residents of urban neighborhoods (Taylor 2001). That work has found anywhere from five to fifteen percent of the variation in fear of crime or other related reactions to crime was linked to between-neighborhood differences.

Pattern of Ecological Impacts: Race/Ethnicity

Results supported Hypothesis 13 and showed that the racial and ethnic compositions of the officers in institutions both mattered. Specifically, in institutions where the percentages of either African-American or Hispanic officers was above the sample average, average perceived danger was higher.

The racial and ethnic compositions of correctional staff have changed over the past three decades in response to legislative mandates and hiring requirements (see Jackson & Ammen, 1996; Martin, 1994). It has been suggested that the hiring of minorities as corrections professionals would reduce tensions between staff and inmates. Now, as compared to thirty years ago, officers are guarding a more diverse inmate population because incarceration rates for African-Americans and Hispanics have grown dramatically (see Sabol, Minton, & Harrison, 2007).

It may well be that in institutions with more racially or ethnically diverse mixes of officers, tensions between officers and non-white inmates are lower. It is therefore plausible that the higher average perceived danger found in institutions with higher proportions of Hispanic or African-American officers might be reduced or disappear once racial and ethnic compositions of inmate populations were controlled. Unfortunately, neither inmate racial nor ethnic composition data were available.

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Racial and ethnic compositions of officers both remained significant even after controlling for average perceptions of assault risk. Average perceived danger was higher in institutions with higher fractions of non-white officers not just because officers in those institutions thought inmate assaults more likely.

Of course, average perceived risk of assaults is not the same as the reported assault rate, in the same way that perceived risk of crime is not the same as actual victimization risk (Ferraro, 1995). Thus, the effect of officer racial and ethnic mixes on average perceived danger might not persist after controlling for reported inmate-on-officer assault rates.

The significant impact of average perceived risk of assaults itself might not have persisted had data been available on inmate ethnic and racial makeup. Using data from residents of a southern state, a recent study of the perceived crime threat posed by racial and ethnic minorities found that "perceived risk of criminal victimization [was] elevated by the perceptions that blacks live in one's neighborhood" (Chiricos, McEntire, & Gertz, 2001, p. 335). It seems plausible, therefore, that impacts of average perceived assault risk on average perceived danger, seen here across Federal correctional institutions, might be markedly reduced after controlling for inmate racial mix.

Racially diverse individuals are thought to bring different perspectives and experiences to their jobs, diversifying work environments (Paoline III, 2003). At the same time, however, the changing racial composition of law enforcement workers challenges stereotyped views about minority communities, and traditional core orientations toward professions such as policing (Eitle, Stolzenberg, & J., 2005; Paoline

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III, 2003). The increased presence of minorities in law enforcement, by challenging these traditional views, may disrupt the status quo.

The generic model of a police or correctional officer is a white male. Indeed, the majority of the current sample of officers was white males. Therefore, just numerically, as a group they are "behind" the racial and ethnic composition effects on average perceived danger.

The dynamic could be as follows. It is plausible that the slow yet steady growth of minorities as correctional professionals, and not as inmates, has been met with trepidation. Martin (1994) stated that black [male police] officers are assumed to be "less knowledgeable, [less] reliable, and [less] able to manage power as supervisors" (p. 392), even though seen as capable officers. In a correctional setting, where officers are always "supervising" inmates, assumptions made by white officers about African-American officers may contribute to the impact of racial composition on average perceived danger.

Partially supporting this idea were some results from additional exploratory analyses. Figure 16 showed that average perceived danger among shorter-term officers, those with fewer than 7 years on the job, compared to longer term officers, was noticeably higher in institutions in the 50th to 75th percentiles on percent African-American officers. Figure 17 found a similar but smaller difference among institutions from the 75th to 100th percentile on percentage Hispanic officers. Officers who have more recently entered the profession of corrections may have had less time to shed the traditional image of correctional officers as white men, presuming that they held this image prior to entering that job. These exploratory analyses should be viewed extremely

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tentatively, however, since they were post hoc, and officer race or ethnicity are not simultaneously controlled.

On the other hand, an alternative dynamic may be operating that has nothing to do with traditional views about law enforcement. Past research on black police officers found that they "interpret behaviors, attitudes, and experiences differently than white males in the same occupation," and this often leads to black officers feeling more socially isolated from other officers (Haarr, 1997, p. 55). As cited in Haarr (1997), Milutinovich (1977) argued the lack of "common experience between blacks and whites in the workplace may lead whites to be psychologically and socially distant from blacks, and thus to transmit less encouragement and support to blacks" (Haarr, 1997). Though the current study controlled for institutional level co-worker support, there may still be an increasing social distance between white and nonwhite correctional officers that contributed to higher average perceived danger in institutions with a greater presence of minority officers.

Despite the uncertainty about the responsible dynamics for the impacts of race and ethnic officer composition at the institutional level, and bearing in mind the discussion immediately above about inmate composition and other variables which might reduce these impacts, in broad terms these results support Reskin's (2000) argument that race (and gender) in the workplace matter. She argues (p. 707) that "inequality at work does not just happen; it occurs through the acts and the failures to act by the people who run and work for organizations" (Reskin, 2000). Her argument separates institutions from individuals. Though discrimination and/or racism may be built into an organization over time, she points out that organizational practices such as job assignments are managed by

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individuals. Indeed, she concludes "there is little contemporary evidence of structural discrimination" in the workplace despite the idea being "sociologically attractive" (Reskin 2000, p. 708).

Her argument underscores the need to learn more about how individual officers, and especially supervisors, behave in correctional contexts and how that may link to structural issues. For example, when jobs are assigned to officers, are African-American officers assigned to particular positions within the prison organization based on their race or race-linked assumptions or inferences? Are these assumptions or inferences based on what has taken place within the work setting, or outside? Her argument provides support for continued investigations into how race is connected to what people do in organizations. "Rather than assuming structural discrimination, we need to assess its prevalence, forms, and loci. And we must investigate how organizational actors use structures to heighten or minimize the importance of race and sex" (Reskin 2000, p. 709). How do the structures of correctional institutions, through the behaviors of officers, including supervisors, contribute to the continued importance of race?

Pattern of Ecological Impacts: Gender

Stereotypes of women as prison workers suggest that they are passive, weak, warm, and nurturing (Baskin, Sommers, Tessler, & Steadman, 1989), qualities that are viewed as detrimental to the job (Crawley, 2004; Martin & Jurik, 1996; Zimmer, 1986). The entrance of women as professionals into the criminal justice system, however, has not made these occupations kinder or gentler (Britton, 2000).

The present study supports the former notion although the process behind it may not be clear yet. There were significant gender impacts at the institutional-level which

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support Hypothesis 14. Specifically, where the proportion of female officers in an institution was above the sample average, average perceived danger was lower. The effect of gender composition persisted even after controlling for average job stress, security level, and average perceived assaults.

It appears that the effect of gender composition on perceived danger at the institutional level was driven by the majority male sample. As shown in Figure 15, average perceptions of danger remained relatively consistent among women officers across institutions of varying gender composition. For men, however, the increasing prevalence of women officers in that institution connected to lower average perceived danger. In the institutions above the 50th percentile, based on proportion of women officers, men's average perceived danger was below the overall average (0). Men's average perceived danger was above the overall average in the institutions below the 50th percentile, based on proportion of women officers. It appeared that as a group, men perceived less danger when the proportion of women officers in the institution was higher

This finding supports the notion that women provide a calming effect on the prison environment. It is possible that the effect extends to officers as well as inmates. One could argue that the calming effect is prevalent only or largely in more violent institutions, specifically high security institutions which typically house male inmates. The current study did control for security level. Nevertheless, as with the impact of officer race and ethnic composition on average, institutional perceived danger, because this study did not have information about inmate gender composition, it is possible that had the latter variable been included it could have markedly moderated or reduced the impact of officer gender composition. The question of the impact of officer gender

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composition on institutional average perceived danger remains upon until another study tests it and also includes inmate gender composition.

Of course, other dynamics beyond just inmate gender composition also might be relevant. The effect of gender at the institutional-level creates questions that cannot be answered by the present study or by previous research. Specifically, why do male officers feel safer when in the company of mostly women? There are processes not captured here that may aid in answering this and other questions.

Pattern of Ecological Impacts: Organizational Climate

Results supported the notion that organizational climate exists and varies across correctional institutions in the present study. In the industrial/organizational psychology area, when employees within an organization, in this case a correctional institution, agree on how they perceive the work environment, organizational climate, as distinguished from individual psychological perceptions of the work climate, is inferred (James & Jones, 1974; Jones & James, 1979; Joyce & Slocum, 1984; Lindell & Brandt, 2000; Woodman & King, 1978). Here, officers' perceptions of various features of work clustered to a degree around each institution's average on that feature; those averages varied across institutions; and the perceived climate averages influenced the perceived danger institutional averages. All of these points underscore that organizational climate in correctional institutions, as has been found in a variety of other private and public organizations, exists as a group level property, and connects to important institutional-level outcomes.

An ongoing question in the industrial/organizational psychology literature is about the multilevel impacts of organizational climate. Recent work in this area has

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considered the impacts of either unit-level perceived features of the work setting or the individual-level perceived features (Schulte, Ostroff, & Kinicki, 2006). This has been described as one of the "key limitations" of work to date; "studies have tended to focus on either psychological [individual level] or organizational [unit or institutional level] climate and have ignored the relative influence of psychological and organizational climate on individual outcomes" (Schulte, Ostroff & Kinicki, 2006, p. 646).

The current results, therefore, make a contribution to the work in industrial/organizational psychology by examining the impacts of both individual-level perceived climate and institution-level average perceived climate to perceived danger. These results, as did the results of Schulte, Ostroff & Kinicki (2006) investigating workplace satisfaction, found that both levels were relevant. There were dynamics connecting perceived climate to the outcome at both the institution and individual levels.

The perceived climate results here, however, also raise some interesting questions about these two different levels of processing. The relevant features of perceived climate affecting perceived danger differed depending on the level.

At the officer-level, more organizational clarity and more supervisory support linked to lower perceived danger, supporting Hypotheses 8 and 9. At the institutional-level, results supported Hypothesis 18. Higher average co-worker support was associated with lower average perceived danger. Although co-worker support was an instrumental variable, average co-worker support still had a significant connection with average perceived danger, even after including average perceived assaults, average job stress and average job satisfaction. Some thoughts on why different elements of perceived climate proved relevant at the officer and institutional levels follow.

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Among individual officers, clearer communication within the organization and support from administrators related to lower perceived danger. This finding supports the idea that organizations tend to be comprised of similar people and over time, their perceptions of the work place become similar as well (Denison, 1996; James & Jones, 1974; Schulte, Ostroff, & Kinicki, 2006). Results also extend current organizational literature by examining more than one indicator of organizational climate. Here, multiple elements of climate are significantly importantly in reducing perceived danger.

The broader prison organization provides training and information about the correctional officers' job. Support from and communication with supervisors regarding performance measures and the possibility of promotion aid in clarifying broader organizational goals, and these processes probably help the officers better understand their roles as well as important current developments within his/her institution. It is differences between officers in an institution on these social processes that connect to individual differences in perceived danger.

At the organizational-level, organizational clarity and supervisory support failed to correlate with perceived danger (results not shown). Current correctional-specific research was unable to help clarify the process operating at the institutional-level. To the author's knowledge, one study has examined aggregate climate indicators in Federal prisons (see Camp et al., 1997); those authors, however, were unable to model between-institution variance.

This finding, however, does connect with work from outside of corrections on organizational climate. Here, stronger average mutual feelings of support among officers, was associated with lower average perceived danger. It appears that knowing officers are

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prepared to do their job and will aid others in stressful situations operates as a group dynamic. Industrial/organizational psychology researchers have suggested that mutual feelings of support may promote a sense of belonging to the work group and the organization (González-Romá, Peiró, & Tordera, 2002). In corrections, knowing that fellow officers are competent works to increase aggregate perceived co-worker support.

The finding here that average perceived co-worker support linked to lower average perceived danger extends organizational theory. It suggests that processes previously framed largely as relevant to individual differences may also be relevant across organizations.

Considering the issue somewhat more broadly, current results support the interplay of the individual and the institution. Elements of individual-level perceptions of organizational climate correlated with perceived danger; an institutional-level indicator of average organizational climate did as well. This suggests that an individual-level construct, perceived danger, is influenced by not only individual perceptions but by the shared perceptions of those engaged in the same prison environment. This moves organizational theory forward by showing that institutional-level factors are important in understanding individual-level outcomes.

Future research should seek to untangle and better define core elements of organizational climate, for example, co-worker support, so we can understand more fully the dynamics occurring among individual employees and across organizations. When data are made available, research should continue to examine multilevel impacts of organizational climate in the prison environment. Hopefully future data can include an even broader set of perceived climate indicators. Such analyses may help prison

administrators more fully understand how perceptions of danger and other relevant outcomes, such as job stress and job satisfaction, connect to individual and shared perceptions of organizational context.

Pattern of Ecological Impacts: Job Stress

To date, job stress has been an outcome of interest in corrections as well as in the broader employment literature. The examination of stress in corrections has been limited to corrections personnel and its impact on policy-relevant outcomes such as turnover. It has not been used as an indicator of processes occurring at the institutional-level.

Results supported Hypothesis 21. Higher average stress levels were related to higher average perceived danger even after controlling for institutional security levels. So, what does it mean to have an entire institution reporting more average stress? It suggests that stress is not merely a function of individuals; there were processes at the organizational level not captured by the current study which worked to increase institutional stress averages and thus average perceived danger.

This leaves open the question of inmate gender mix, a variable mentioned above and not available in the current study. Did variations in inmate gender composition create these differences in average stress across institution? For example, does a higher fraction of male inmates increase stress levels for all officers in an institution?

Future research on this construct of average perceived stress, new to the corrections research, should examine the characteristics of those institutions reporting higher than average stress. It is plausible that characteristics of those institutions not available in the current study, such as inmate gender mix, or degree of over crowding, or inmate/staff ratios, could create varying levels of average stress.

Pattern of Ecological Impacts: Perceived Assaults

There were multilevel effects of perceived assaults. Results supported Hypothesis 22. Institutions where officers perceived higher chances of assault from inmates had higher average perceived danger even after controlling for institutional security levels.

A simple beginning expectation here would be that differences in security levels would drive averages in perceived risks of assault, with those averages being higher in higher security level institutions. Since average perceived risks of assault continued to influence average perceived danger even after controlling for security levels, it is not simply in higher security institutions where officers perceive higher average risks of assault. In fact, it could be argued that higher security institutions may be more secure, and places where officers on average perceive lower risks of assault; in higher security institutions inmate movement is more limited and officer/inmate ratios may be higher.

The continuing relevance in this research of perceived risk of assault, at both the officer and institutional levels, supports and extends the fear of crime literature. Work with residential populations has consistently found that the perceptions of victimization risks for specific crimes link to higher fear of crime; the link is sometimes stronger than the reported crime-fear link (Ferraro, 1995; LaGrange, Ferraro, & Supancic, 1992; Wyant, 2007). In addition to aligning with the fear of crime literature, the findings here extend that work in two ways. They suggest that even among an occupational group where physical confrontation is expected, perceived risk of assault links to fear. Further, it suggests there may be interesting parallels to be found between the fear of crime work in residential populations and in correctional settings. Other researchers, such as George Rengert and Jerry Ratcliffe, already have begun exploring these parallels.

An open question for corrections research is whether perceived risks of inmate assault are more useful than reported inmate-on-officer assault rates. Bureaucratic climate variations might influence what is considered an assault and ultimately, what gets reported. This is an important question for future work.

Further exploring the parallels here with the fear of crime literature, the latter has consistently noted that women and African-Americans are more fearful though the former is less likely to be victimized (Ferraro, 1995; Skogan & Maxfield, 1981; Taylor, 2001; Wyant, 2007). Results here show this is true among correctional officers too. Female, African-American, and Hispanic officers reported higher perceived danger than white males. With regard to age, the fear of crime literature has produced inconsistent findings. Ferraro (1995) argued that older adults were no more likely than younger adults to higher fear of crime. Here, though older than average officers perceived more danger, the finding was non-significant.

There are several indicators not available for the present analysis. These might help explain the relationship between perceived assaults and perceived danger at the institutional level. These might include, for example, inmate gender composition, misconduct type, percent overcapacity, and average inmate age.

In their 2003 study of prison misconduct, Camp et al. found that misconduct type varied across BOP institutions. In extending the present study, misconduct type may clarify the relationship between perceived risk of assaults and perceived danger at the institutional level. For example, officers in institutions with more drug-related or violent misconduct may perceive themselves to be more at risk, thus, they would be more likely to report more perceived danger.

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Institutions operating over capacity may be more likely to report high average perceived danger. In this instance, the increased ratio of inmates to officers would reduce perceptions of safety among officers.

The average age of inmates may mediate the relationship between perceived assaults and perceived danger. Older inmates are less likely to engage in misconduct (Camp, Gaes, Langan, & Saylor, 2003). Therefore, institutions housing a higher proportion of older than average inmates would report lower levels of perceived assaults.

Pattern of Ecological Impacts: Institutional Characteristics

Characteristics of the institution matter, specifically, geographic region and security level. Institutions in the west had lower average perceived danger. Regional variations have been found in the job satisfaction literature. There are currently no theoretical explanations for why there would be regional variations in officers' perceived danger. To thoroughly examine regional variations in perceived danger, a comparative analysis of BOP institutions in the west and other regions is required.

High and medium security institutions correlated with higher average perceived danger which supports Hypothesis 23. The effect of security level appears intuitive; more secure institutions house more dangerous offenders. There may be, however, other related processes occurring at the institutional-level which were not captured by the data.

As mentioned, there were predictors not included in the examination of perceived danger which may clarify various relationships, for example, inmate gender composition, percent overcapacity, and misconduct type. Because there are more males incarcerated at the state and Federal levels, it is likely that a majority of more secure institutions house

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male offenders. Thus, institutions which house male offenders may report higher than average perceived danger.

On a similar note, inmates are now sentenced to and are serving longer prison terms due to changes in legislative policy such as mandatory-minimums. To deal with such changes, many institutions are operating well above their designed capacity making, the prison environment less safe for inmates and staff thus increasing overall levels of perceived danger. Misconduct rates and types of misconduct are likely to vary across institutions. Institutions experiencing high rates of violent misconduct, for example, may be more likely to report more perceived danger.

Individual-level Differences

Pattern of Individual-level and Work Group Impacts: Race/Ethnicity

The present study found significant differences in perceived danger at the individual-level. African-American officers and Hispanic officers perceived more danger than white male officers (see Hypothesis 3). Also, as the African-American work group became smaller relative to white officers, their safety concerns rose. This latter finding supports Hypothesis 7.

Both African-Americans and Hispanics are numeric minorities in corrections; their entrance into the criminal justice system as professionals has been relatively recent (Jackson & Ammen, 1996) and it is likely that their inclusion into the work force has been met with hesitation.

Research on job satisfaction and job stress suggests that African-Americans report high levels of job stress and low job satisfaction. While the literature is scant on Hispanics, they report more stress than whites yet less stress than African-Americans.

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Findings, however, are inconsistent. This line of reasoning does not support current findings as both satisfaction and stress were controlled for and the effects of race/ethnicity on perceived danger remain.

A predictor not included in the analysis which may explain the relationship between race/ethnicity and danger is turnover rates. Both groups report higher rates of job turnover, specifically, African-Americans and Hispanics were found to be respectively 47% and 69% more likely to report strong turnover intentions when dissatisfied when compared to whites (Mitchell, Mackenzie, Styve, & Gover, 2000). The authors argue strong turnover intentions may be associated with to racial hostilities; this line of reasoning may also hold for minorities and perceived danger.

As a work group, African-Americans (and Hispanics) may experience harassment which may lead to increased levels of isolation and perceived danger. Items in the *Prison Social Climate Survey* ask about unwanted staff behavior in the workplace yet the items are limited to sexual misconduct. No items solicit information about harassment based on race or ethnicity. This type of information may provide insight into why racial minorities report feeling more isolated as a group.

Kanter (1977) argued that being a rarity in the workplace shapes the experiences of workers, in this case, African-Americans and Hispanics. African-Americans and Hispanics experience the work place differently than whites yet why this was so remains unclear. Clearly, the racial composition of the correctional officer workgroup matters. Race may operate as a property of the officer as well as the structural feature of the institution.

Pattern of Individual-level and Work Group Impacts: Gender

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Results from the present study supported Hypothesis 1. Female officers perceived significantly more danger than male officers at the same institution. Also, as their work group became smaller relative to the men, their safety concerns rose (see Hypothesis 6). These findings were consistent across all models.

Previous research on differential gender experiences in the workplace suggests women report more stress than men. On a similar note, work-home conflict, i.e., juggling the responsibilities of family and child-care and one's personal commitment to the work force, has been thought to affect how women perceive their jobs and their place in the work environment (Hartstock, 1997; Held, 1997; Hochschild, 1989, , 1997; Kanter, 1993). The stress of balancing the two worlds arguably becomes one of the reasons why women are seen as a risk in the prison environment. They are viewed as mentally incapable of dealing with the harsh conditions of prison work making them a liability to their fellow officers. If work-home conflict, however, resulted in increased stress, this line of reasoning does not hold true for the present study. Gender impacts remain even after controlling for dissatisfaction and stress.

The same was true for gender isolation. Women were more isolated yet the impact of gender isolation held after controlling for dissatisfaction and stress. Britton (2003) argued that as employees, women occupy the bottom rung of most occupations leading to occupational segregation, in this case, isolation from male officers. They are likely to be viewed as tokens which represents their gender category rather than their independent selves (Kanter, 1977). The token status makes women more visible and vulnerable to negative stereotypes for example, the likelihood of inappropriate relationships with inmates. They must work harder than others to have their achievements noticed (Kanter,

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1977). These processes lead to isolation which encourages continued resistance to their presence as officers. This shapes their experiences as officers and how they perceive danger.

It can be assumed that isolation from one's peers would be lead to dissatisfaction and stress. Though this may be true, the effect of work group isolation remained consistent. As women become more isolated and dissatisfied, as a group, they may experience high rates of turnover which makes them fewer in number and less available for support. As mentioned, future research may include this predictor in analysis of work group isolation.

Research on women in policing suggests that as a group, there is little unity among women (Martin, 1994). They are divided by "divergent perspectives on occupational performance, gender enactment" (p. 395) and do not see it in their best interest to organize (Martin, 1994). Even though the proportion of women as a work group may increase, there may be conflicts within the culture of female offices which inhibits their cohesion as women and as a work group with special needs and interests.

Future research should consider an in-depth analysis of the correctional officer culture and its impact on female officers. Specifically, can women operate as an integral part of the inner circle of correctional officers? What about women makes them a potential liability to other officers? The examination of short- and long-term female and male officers would provide an interesting perspective into how the views of women as officers has changed over time, and more importantly, how it has remained the same. Results from the analysis of the structure of perceived danger question the notion that differences in perceived danger are a function of gender. In fact, these differences may be

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a function of gender and race as black women perceived more danger than all other groups.

As discussed, the present study found multilevel impacts of gender. These analyses advance the literature on gender and corrections through the additional examination of work group isolation by gender.

The patterns of results here by gender at three different levels could be further explored through the use of feminist theory and gendered organizational logic. Feminist theory and gendered organizational logic may help structure future research by providing insight into the dynamics behind each of the effects of gender found here. Women report more danger than men after controlling for all other factors. This supports the feminist perspective by suggesting that women are qualitatively different from men. As individual officers, they perceive the prison environment to be dangerous though they have been trained to experience it similarly to men. Utilizing this perspective, future research should examine why differences among men and women persist. Results here support the notion that differences in perceived danger are not driven by job stress, dissatisfaction, or perceived risk. So, why did female correctional officers perceive more danger than their male counterparts? An in-depth analysis of female officers may shed light on this issue.

As a work group, when the women were a smaller fraction of the officer work force in an institution, and thus more isolated, they reported more perceived danger. What's behind this?

The present study was not able to tap into work group dynamics though this would be an important area for future research. The feminist perspective argues that women are different; gendered organizational logic suggests that processes within the

organization may make it difficult for women to assimilate into the broader prison culture. Though neither perspective focuses on the work group, elements of both perspectives could be used to highlight impacts of a gender-specific work group. Specifically, perhaps when there are relatively fewer women in an institution's group of officers, gender-linked differences are highlighted, and this foregrounding links to more perceived danger among the women. Even with this vantage, questions persist. Are the dynamics operating in the broader work group (i.e., male officers) that isolate men from women? Are the dynamics a function of the broader organization? An examination of female and male work groups may uncover dynamics specific to the work groups by gender and/or the organizations in which they work.

One may assume from the gendered organizational logic perspective that women would report more danger as they are at a numerical and supposed physical disadvantage in corrections. Results from the present study suggest otherwise. As the number of women employed in a particular institution increased, all officers perceived themselves to be safer. Though research suggests that women provide a calming effect on the prison environment, this may be a function of job assignment practices. For example, it is plausible that positions usually reserved for men (i.e., those dealing with more volatile inmates) are now assigned to women and it is this reassignment that has produced a calming effect on the prison environment. Practices in the institutions may be gendered but they may be working to decrease perceived danger. It is clear that in the case of perceived danger, women provide a feeling of safety for all officers. An analysis of practices and policies in the prison organization may help determine how, and to what

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extent, women and men are favored and how this changes dynamics within the organization.

Pattern of Individual-level Impacts: Organizational Climate

There were multilevel impacts of organizational climate though significant correlates were dependent on the level examined. At the individual level, organizational clarity and supervisory support reduced perceived danger. These results supported Hypotheses 8 and 9. Both are indices previously created by the Bureau of Prisons. Both tapped into different processes occurring within the organization such as the ability to participate in decision making, issues of autonomy, i.e., whether officers were given the opportunity to make decisions affecting their job, and elements of social support from administrators and immediate supervisors.

Elements of the immediate organizational structure appeared to affect individual officers and how they experienced danger. It is from the broader organization and immediate supervisors that officers receive training and cues about how the role of the correctional officer and how to handle volatile situations.

The effects of organizational clarity and supervisory support were consistent even after dissatisfaction, stress, and perceived assaults were added into respective models. Elements of the organization and its structure not captured in the present study may aid in the examination of this relationships.

Several organizational climate indicators were not included in the present study because of the correlations between indicators, for example, BOP commitment, and effectiveness in working with inmates. After examination of the items used to create said indicators, it could be argued that the indices created by the BOP to measure

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organizational climate overlap in that several index items are similar. In this case, the indices used in the present study to measure elements of organizational climate may be better examined as individual items and not multi-item indices.

Findings from the present study supported organizational research in that organizational climate matters in how officers perceive the prison environment. Elements of organizational climate tied to perceived danger. As this study did not include a qualitative component, future work on the relationship between organizational climate and perceived danger may include interviews with prison administrators and supervisors who directly influence those in their charge, specifically correctional officers. An examination of this kind may shed light on how they encourage and support their workers in times of distress, i.e., inmate uprisings and conflict between officers.

Pattern of Individual-level Impacts: Job Stress

Results from the present study support Hypothesis 10 which stated that officers who report more stress report more perceived danger. This finding extends the stress literature by showing that stress acts as a significant correlate of perceived danger. The effect of stress on perceived danger was consistent while holding constant other variables, i.e., dissatisfaction, and perceived assaults. It is plausible that the ordering of the inclusion of variables may explain the relationship between stress and perceived danger. For example, stress was added in the final individual-level model after perceived assaults. If added earlier, the addition of perceived assaults might mediate the impact of stress. In this case, perceived assaults would be more important than stress in predicting perceived danger. Further research is needed to reexamine the issue of directionality

(stress → perceived danger; perceived danger → stress) and whether the reordering of model variables would mediate said relationships.

Pattern of Individual-level Impacts: Perceived Assaults

Perceived assaults significantly influenced perceived danger. Officers perceiving more inmate-on-staff assaults in the previous 6 months reported more perceived danger (see Hypothesis 12). This finding supports the fear of crime literature which has consistently found that perceptions of victimization risk, i.e., the possibility of what might occur, are more salient than crime itself (Ferraro 1995; LaGrange et. al., 1992; Rountree, 1998; Wyant, 2007). In other words, an individuals' subjective experience of risk is paramount.

Inmate gender composition may shed light on the relationship between perceived assaults and perceived danger. For example, officers who guard male (or female) inmates and perceive them to be dangerous may report increased risks of assaults. Though the present study was not able to uncover the processes connecting assaults to perceived danger, how individual officers perceive their work environment may significantly affect work-related outcomes.

Cross-level Impacts of Supervisory Support

Results hinted at cross-level impacts of supervisory support, specifically, supervisory support matters more in some institutions than in others. The impacts of supervisory support on perceived danger varied somewhat ($p < .10$) from institution to institution. Further, the percent of African-American officers in a specific institution was marginally linked to the strength of this impact of supervisory support. The slope of supervisory support was somewhat moderated by the percent of African-American

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officers; supervisory support was somewhat more important in institutions with a majority of white officers (see Figure 22). Further analysis showed that majority of supervisors in the sample of institutions was white. Therefore, this dynamic may be partly due to an increasing racial mismatch between supervisors and officers as the percentage of officers becomes increasingly African-American.

This marginally significant cross-level impact of officer racial composition on the slope of supervisory support intimates that features of the institution influence individual-level perceptions of the work setting in complex ways. This finding moves the organizational climate literature forward by suggesting that other contextual features of the prison environment rather than organizational climate may explain varying impacts of climate.

Future research should investigate the processes occurring at the institutions where the impacts of supervisory support was stronger (majority white officers) and where it had little to no effect (majority African-American officers). In particular, as suggested above, research should consider other indicators of the institution, for example the racial and gender composition of inmates, when attempting to explain which features of the institution influence how individuals perceive danger.

Again, the variation across institutions in the impacts of supervisory support, and the connection between these variations and racial composition of the work force, were both of marginal significance. Therefore these findings should be viewed very cautiously.

Other Hypotheses and Results

Specific hypotheses and results from the present study were not discussed as they were not central to the analysis of perceived danger. At the individual-level, older than

average officers perceived less danger. Results support Hypothesis 2 and were consistent regardless of how gender and race/ethnicity variables were operationalized. When analyzed in the job satisfaction and job stress literatures, age has produced mixed results (see discussion in Chapter 2). Current results, however, support the impact of age on how officers perceive danger.

Officers with more education were hypothesized to perceived less danger (see Hypothesis 4). The present study found that education was not a significant correlate of perceived danger. Like age, the impact of education on job stress and dissatisfaction has produced mixed results. Attempting to professionalize the correctional work force by increasing educational requirements may be counterproductive (see Cullen et al., 1985). Though the effect was non significant, education increased perceived danger.

Job tenure had a negative relationship with perceived danger (see Hypothesis 5) though the impact was non significant. Like age, job tenure has produced mixed results in the job stress and dissatisfaction literatures. With regard to the present analysis, it appears that experience on the job does not shape how officers perceive danger.

When entered into the final individual-level model, job satisfaction was a significant correlate of perceived danger (see Hypothesis 11). Officers who reported more job satisfaction reported low perceived danger. Due to the issue of directionality (see previous discussion), the impact of job satisfaction on perceived danger should be interpreted with caution as there was not a consistent effect of this variable at both levels.

At the institutional-level, results did not support for several hypotheses. Institutions with older than average officers had lower than average perceived danger though the effect was non significant (see Hypothesis 16). Institutions with higher

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average education were hypothesized to have low average perceived danger (see Hypothesis 17). The finding was in the opposite direction and non significant. Higher effectiveness in working with inmates was hypothesized to correlate with low average perceived danger (Hypothesis 19). This result was non significant. Longer average job tenure had a positive effect of average perceived danger. This was opposite of the hypothesized direction (see Hypothesis 15). The relationship between average job tenure and average perceived danger was significant in only Model 4. The relationship rendered non significant after adding average perceived assaults.

It appears that these results were non significant because they are a function of the individual, not the prison organization. Aggregating personal-level attributes is not common to corrections research (Camp, Saylor, & Harer, 1997). Further work is needed to help clarify these relationships.

Remaining Ecological Variance

The institutional-level correlates identified to explain perceived danger were explored and most of the relationships were in the 'right' direction. Nonetheless, after several series of models examining perceived danger, a significant amount of total variation remained, i.e., 25% of the initial between-institution variation on the outcome was not explained. What remains still represents significant variation. Liska (1990) argued that the role of significant contextual variation should not be ignored for theoretical reasons, even though it may seem small for policy reasons. Future research should continue to explore the determinants of this remaining significant ecological variation.

Specifically, he stated "even when only a small proportion of the total variance of a dependent variable occurs between social units…that very small proportion and the contextual variables that it explain it are pivotal in conceptually linking micro- and macro-level theories" (Liska, 1990, p. 298). Indicators of inmate composition (i.e., inmate gender and racial mix) and assault rate data may aid in explaining the small proportion of remaining variation.

Policy and Practice Implications

Because of the many study limitations described at length further below, the current study has no direct implications for either the policies of correctional institutions or their practices. The current work, however, finds connections between an outcome that does tie in closely to (a) a number of practice variables administrators seek to manage, like turnover and absenteeism, and (b) a number of predictors that have been shown in earlier work to relate to predictors, like stress and dissatisfaction, of those outcomes.

To make the results more practice relevant, indicators related to training issues are required. As officers receive standard academy training and annual training sessions, what is involved in their training may provide information into how they are trained to deal with dangerous situations. Also, how jobs are assigned within the institution could be an important component in understanding how danger varies within an institution, i.e., which officers are assigned to positions requiring inmate contact and how assignments are determined, for example, tenured officers are given assignments based on personal preference.

Given the study limits and no measures of policy (as implemented) variables, the present study has no policy implications. But, given that results show inequities both by

race and gender, it would seem that this is a policy area in need of exploration. A longitudinal study of minority and female officers in corrections may aid in understanding both racial/ethnic and gender differentials, specifically, how policies adversely affect these officers. The causes of these differentials must be better known and the consequences better known before policy makers can decide if they want to work on this as a policy area and ultimately, what they would want to do about it.

Whether to work on perceived danger as a policy area would seem to require learning about the adaptive impacts of danger (people being more careful) vs. the maladaptive impacts (officers being too forceful/aggressive with prisoners). How officers react to danger is important however it seems most relevant to policy to examine those institutions where perceived danger is highest as most policies are created for the broader organization.

Limitations

There are several limitations of the current work. This study used five waves of pooled surveys treated as cross-sectional data. Results do not reflect causal impacts but rather cross-sectional relationships.

Although hypothesized models from theories about job satisfaction and stress suggest that perceived danger acts as a significant predictor, the proposed ordering of effects may be wrong. In recognition of this concern, complete results for models without stress and job satisfaction, in recognition of directional uncertainty when they were included, were reported.

Although different institutions are identified, the corresponding specific BOP institutions are not. Consequently, the data did not include reported staff assault rates or

injury rates. Since variations in institutional danger indicators like assault rates might affect perceptions of assault rates, impacts of perceived assaults seen here might be different if models had included assault rates. Other institutional impacts also might be altered. These issues await further study.

Though the data included a number of organizational climate indicators, organizational structural variables were not available. Variables like percent over capacity, inmate racial and gender composition, inmate violence histories, size of institution, and age of institution thus could not be included. There are several implications of this gap. Most importantly, institutional organizational climate impacts variables should not be viewed as definitive. Added structural variables might diminish their impacts. Results at the institutional-level must therefore be interpreted cautiously since institutional indicators included only security level, region, and organizational climate. The inclusion of institutional security level, however, may provide insight into the type of inmates housed in the institution (i.e., more secure institutions house more dangerous inmates) and how this may drive perceptions of danger.

Results reflect only Federal correctional officers' views. There are important differences between Federal and state-run correctional systems, For example, the Federal Bureau of Prisons is a centralized administration (BOP, 2005). Policies and procedures, including sentencing guidelines, are consistent throughout the Federal system. This is significantly different from state-run correctional systems whose policies and procedures are allowed to vary from state to state.

Two important differences between state and Federal corrections are the number and types of inmate. In 2005, 179,220 inmates were under Federal jurisdiction while

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more than 1,260,000 were incarcerated in state institutions (Harrison & Beck, 2006). In 2001, more than half of all state prisoners (n = 650,400) compared to 11% of Federal prisoners (n = 16,688) were incarcerated for a violent offense (Harrison & Beck, 2006). During the same time period, 57% of Federal and 21% of state prisoners were incarcerated for a drug offense. Between 1990 and 2000, violent offenders accounted for 53% of the growth in the state inmate population while drug offenders accounted for 59% of the growth in the inmate population at the Federal level (Harrison & Beck, 2006).

Given these and other differences, results generated from these analyses may not apply to state-run or local institutions. Of course, external validity is always an empirical question (see Taylor, 1993, p. 164-165).

Results cannot be used to make specific statements about current policies and procedure within the Bureau of Prisons. Individual institutional identifiers and policy relevant variables, for example, items asking about policy-specific situations (training issues, officer use of force, inmate-staff relations) were not available. A more policy relevant study would include these variables in addition to an analysis of BOP training guidelines (both pre- and post- correctional officer academy training), disciplinary procedures, policies with regard to leave of absences (personal, medical, etc.), and other procedures which directly influence employees.

Strengths

The present study has several important strengths. The examination of perceived danger among Federal correctional officers, to the author's knowledge, is the first of its kind. Results move the field of corrections research forward by showing that perceived

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danger is a significant predictor of policy-related outcomes but it is also an outcome of empirical interest.

Perceived danger was found to significantly vary across institutions. Results obtained were not an artifact of the unit of analysis. The consistent findings of race/ethnicity, gender, organizational climate, and perceived assaults suggest that individual-level results were not impacted by institutional-level results.

The present study examined perceived danger using multilevel modeling which allowed both individual- and institutional-level predictors to have impacts independent of one another. Though current research is moving in this direction, i.e., examining the individual as well as the organization, the current study utilized aggregated individual-level variables. This moves beyond the traditional examination of individual-level properties. Results have shown that there are relevant theory and practice concerns that could be addressed through the study of perceived danger.

An additional strength of the present study was the examination of a large random-subsample of correctional officers in a large unitary system of corrections. Though the use of a single corrections system may be viewed as a limitation, the Federal Bureau of Prisons is similar to many large state systems of corrections (see previous discussion). It also provides a look at a large organization and how its structure affects its workers.

Closing Remarks

Results from the present study relate to previous correctional outcomes yet leave open a series of questions about the processes underlying perceived danger. Though it is an underdeveloped outcome in corrections research, perceived danger has shown to have

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important implications for understanding how officers perceive the prison environment.

Perceived danger was examined through the use of a multi-level, quantitative perspective.

This perspective helps untangle misspecified relationships and provides insight into how

the prison organization affects individual officers. Multilevel effects of gender,

race/ethnicity, organizational climate, and perceived assaults suggest that perceived

danger is an innovative way of examining the work environment for correctional officers.

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APPENDIX
MISSING DATA VALUES FOR DEPENDENT VARIABLE
AND INDIVIDUAL-LEVEL VARIABLES

	Item N	2001	2002	2003	2004	2005	Total (n / %)
Dependent Variable							
Perceived Danger	1 (f)	6	5	4	7	7	29 (0.7%)
	1 (m)	6	4	5	3	6	24 (0.6%)
	2 (f)	309	288	288	281	210	1,376 (33.2%)
	2 (m)	310	311	349	304	241	1,515 (36.5%)
	3	171	155	155	166	15	800 (19.3%)
	4	110	106	125	121	74	536 (12.9%)
Individual-level Predictors							
Gender	-	7	10	5	7	2	31 (0.7%)
Race	-	20	13	19	30	18	100 (2.4%)
Ethnicity	-	9	5	3	9	5	31 (0.7%)
Age	-	5	6	8	13	10	42 (1.0%)
Education	-	0	0	0	0	0	0
Job Tenure	-	33	38	35	153	146	405 (9.8%)
Perceived Assaults	-	6	6	11	7	6	36 (0.9%)

APPENDIX (continued)

	Item N	2001	2002	2003	2004	2005	Total N (%)
Organizational Clarity	1	1	4	3	0	1	9 (0.2%)
	2	1	6	4	1	4	16 (0.4%)
	3	3	6	4	5	4	22 (0.5%)
	4	1	4	3	3	3	14 (0.3%)
	5	2	2	2	3	3	12 (0.3%)
	6	2	5	3	2	3	15 (0.4%)
	7	3	5	3	3	2	16 (0.4%)
	8	3	5	9	1	3	21 (0.5%)
	9	5	7	5	5	7	29 (0.7%)
	10	2	7	3	10	10	32 (0.8%)
Effectiveness	1	5	12	20	10	14	61 (1.5%)
	2	5	14	17	9	14	59 (1.4%)
	3	8	17	19	10	17	71 (1.7%)
	4	22	26	35	11	16	110 (2.7%)

APPENDIX (continued)

	Item N	2001	2002	2003	2004	2005	Total N (%)
Supervisory Support	1	3	5	3	5	4	20 (0.5%)
	2	4	5	4	1	3	17 (0.4%)
	3	3	16	16	2	1	38 (0.9%)
	4	4	17	16	7	1	45 (1.1%)
	5	4	19	17	3	2	45 (1.1%)
	6	3	19	18	20	14	74 (1.8%)
	7	5	18	17	19	17	76 (1.8%)
	8	9	19	20	20	20	88 (2.1%)
	9	3	19	20	19	16	77 (1.9%)
	10	3	19	19	21	14	76 (1.8%)
Co-Worker Support	1	3	8	3	11	12	37 (0.9%)
	2	2	8	6	10	16	42 (1.0%)
	3	6	9	14	8	12	49 (1.2%)
	4	11	10	18	12	13	64 (1.5%)
	5	7	10	15	8	12	52 (1.3%)
	6	6	10	17	12	12	57 (1.4%)

APPENDIX (continued)

	Item N	2001	2002	2003	2004	2005	Total N (%)
Job Satisfaction	1	3	12	4	11	14	44 (1.1%)
	2	5	8	4	10	14	41 (1.0%)
	3	3	11	3	9	14	40 (1.0%)
	4	5	12	6	10	13	46 (1.1%)
	5	2	10	3	8	9	32 (0.8%)
Job Stress	1	5	13	18	12	14	62 (1.5%)
	2	7	13	20	10	15	65 (1.6%)
	3	20	25	35	15	14	109 (2.6%)
	4	25	29	39	14	20	127 (3.1%)
	5	23	28	42	15	20	128 (3.1%)
	6	22	28	41	15	21	127 (3.1%)

Note. The table displays: the total number of missing responses by year and the sum and percent of the total missing values. The column, item n, refers to the corresponding number of the item listed in chapter 3 (see for further details). Missing data were analyzed and imputed using the expectation-maximization (EM) algorithm in SPSS (see Chapter 3).