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Importation and Deprivation Explanations of Juveniles' Adjustment to Correctional Facilities

Angela R. Gover, Doris Layton MacKenzie, Gaylene Styve Armstrong

Abstract:

Two theoretical explanations, importation and deprivation, are commonly used to explain inmate adjustment to the correctional environment. This study examined the relationship of selected importation and deprivation factors on juveniles' anxiety levels while they were confined to institutions. Self-reported data collected from 3,986 juveniles and aggregate level data collected from interviews with administrators at 48 U.S. correctional facilities were used in a probit regression analysis. Importation and deprivation factors were found to have a significant impact on juveniles' anxiety levels. Youth who were younger, White, or had a history of exposure to family violence experienced more anxiety. Youth confined to an institution modeled after military boot camps reported higher levels of anxiety. Juveniles who perceived their institution as having less justice and permitting less activity reported more anxiety. Consistent with prior literature, support was provided for a combined theoretical model of importation and deprivation factors for explaining juveniles' institutional adjustment.

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The process by which inmates adjust to the negative influences of an institution has continued to receive attention in the field of corrections. Research on inmates' reactions to incarceration has primarily focused on behavioral measures of adjustment. It is, however, also important to examine the impact the institution has on psychological measures of adjustment. After all, because one of the primary goals of corrections is to rehabilitate offenders, it is important to understand how inmates adjust to the institutional environment. This issue is particularly of concern regarding juveniles because they may be of the best hope for rehabilitation.

Adjustment to institutional life traditionally has been operationalized in the literature by two competing models: importation and deprivation. These two theories have been used most often to explain adult inmates' adjustment, but have increasingly been applied to juveniles as well. Deprivation theory "focuses primarily on the prison environment itself. Imprisonment, according to this view, inherently deprives the inmate of basic needs, resulting in tension and particular ways of adaptation" (Parisi, 1982, p. 9). Early deprivation theorists argued that institutional deprivations produced *pains of imprisonment* that include the loss of personal security, material possessions, social acceptance, personal autonomy, and heterosexual relations (Sykes, 1958; Sykes & Messinger, 1960). Inmates react to these pains with increased stress, anger, or antistaff attitudes. In contrast to the deprivation model, importation theory emphasizes the "character of inmates that precedes their institutionalization" and presumably shapes their adjustment process (Parisi, 1982, p. 9). From this perspective, inmates entered the institution with past experiences and demographic characteristics, and these were the important predictors of later adjustment. Together, the two theories offer an explanation for how institutionalized offenders adjust to correctional environments as measured by both official actions (e.g., misconducts) and internal reactions (e.g., attitudes and stress).

Many juveniles have problems adjusting to life in correctional institutions because their loose and unstructured behavior patterns on the outside were suddenly brought to an end by the process of arrest and incarceration (Zamble & Porporino, 1988). As a result, juvenile offenders may feel extreme anxiety, which can be dysfunctional for positive change. It is important to note that some research on inmate change during incarceration indicates that prison inmates are most receptive to individual change during the early periods of incarceration, when emotional stress is high. However, after several months of incarceration, the high stress level tapers off, and the desire to change decreases (Zamble & Porporino, 1990). Identifying juveniles with high anxiety levels, whether it was caused by institutional conditions, past experiences, or a combination of both, would allow treatment staff to direct attention to those who experienced negative emotional reactions to confinement. In this article, the anxiety reactions of juveniles incarcerated in

two different types of institutions were examined.

DEPRIVATION THEORY LITERATURE

Deprivation theories explain inmate adjustment to the institution according to the unique characteristics of the institution. Under this model, researchers examine prison-specific variables that influence the degree of subculture assimilation within the prison (Lawson, Segrin, & Ward, 1996). Researchers have examined the type of institution inmates are confined to, institutional crowding, the ratio of staff to inmates, length of time of confinement, and other institutional conditions (e.g., levels of justice, freedom, danger, activity, structure, etc.).

Type of facility has been one of the most common deprivation factors used to account for institutional adjustment (Goodstein & Wright, 1991; MacDonald, 1999). Institutions that focus on custody over treatment are expected to be more stressful for inmates. Several studies have found that institutions that place more emphasis on custody, such as maximum-security prisons, had more institutional misconducts (i.e., violence and other infractionary behavior) (Feld, 1981; McCorkle, Miethe, & Kriss, 1995; Poole & Regoli, 1983). In contrast, however, Hepburn and Albonetti (1980) found that institutions that place less emphasis on security tended to create role conflicts among staff. This in turn alienated inmates. The alienation subsequently resulted in inmates' developing attitudes in opposition to the institution (Smith & Hepburn, 1979).

Another condition of confinement expected to be associated with adjustment is structure. The level of structure in an institution would be expected to be a condition of certain types of facilities. A coercive, highly structured environment within a correctional facility has been found to create structurally generated alienation, more stress, and higher prisonization (Thomas, Peterson, & Zingraff, 1978; Thomas & Zingraff, 1976).

A relatively new type of facility that has been extremely popular since the early 1990s for juveniles is a boot camp program (Gover, Mackenzie, & Styve, 2000). Boot camps borrow basic elements from the military philosophy and incorporate them into a correctional program. For example, boot camp participants usually enter and exit the

program in groups (e.g., in a platoon or squad), wear military uniforms, address staff with military titles, and participate in marching and drill and ceremony as a common daily activity (see Gover, Styve, & MacKenzie, 1998; MacKenzie, Styve, & Gover, 1998). Such program components suggest a highly structured and custody-oriented environment.

If institutions that focus on custody and structure are indeed more stressful for inmates, these boot camp-type programs would be expected to be more stressful for inmates. Critics of boot camps argue that such characteristics make correctional boot camps poor therapeutic environments because the stressful atmosphere is not conducive to positive change, individual growth, and quality inter-personal relationships (Morash & Rucker, 1990).

In addition to the type of facility, the impact of institutional crowding has been examined as a deprivation factor that affects adjustment to prison (Ellis, 1984; Gaes & McGuire, 1985; MacDonald, 1999; McCorkle et al., 1995; see also Walker & Gilmour, 1984, for a review of the literature). The probability of institutional violence is expected to increase because inmates become irritable from crowding and lack of personal space. Crowding may also lead to increased stress due to a reduction of resources (e.g., programs, staff, etc.) available to inmates. Measured at both aggregate and individual levels, researchers have found institutional violence to be positively associated with increased levels of crowding (Gaes & McGuire, 1985; McCorkle et al., 1995; Walker & Gilmour, 1984). However, the relationship between crowding and aggression has not always been found (Wright & Goodstein, 1991). For example, Wormith (1984) found that inmates whose personal space needs were not met did not necessarily engage in behavioral problems.

Deprivation may be related to other conditions of confinement or aspects of the institutional environment. For decades, researchers have suggested that there is a significant relationship between inmates' perceptions of their institutional environment and the adjustment they make to confinement. Early research by Moos (1971) suggested that inmates' motivation to find satisfaction and rewards within the institutional culture is predicted by features of the environment. According to Wright (1991), inmates

whose needs were met by the environment experienced higher levels of successful adjustment and lower levels of distress.

Justice is another condition of confinement that has been theoretically hypothesized to affect inmate adjustment. According to Wellford (1967), resistance to institutional authority potentially exists when inmates view disciplinary commitments as unjust. Individual inmates who felt they had been treated unjustly were also more likely to violate rules (McCorkle et al., 1995). Other inmates who view the institution as unjust may adjust to the conditions of confinement by using drugs, a form of self-destructive adjustment (Sykes, 1958).

Inmate attitudes and adjustment have also been found to be related to the length of time served in prison (Goodstein & Wright, 1991). One study (Wheeler, 1961) supported findings of a U-shaped curve in relation to conformity to conventional norms. At the beginning of inmates' length of stay in prison, they conformed to conventional values, went through an adjustment experience during the middle of their sentence, and then returned to conventional values at their release. However, other studies have found that inmate attitudes vary according to their length of confinement and tended to support the notion that longer time in a facility is associated with increased antisocial attitudes (Garabedian, 1963; Wellford, 1967). Inmates may also experience higher levels of stress during the initial incarceration phase as they adjust to their new environment (MacKenzie & Goodstein, 1986; Zamble & Porporino, 1988).

IMPORTATION THEORY LITERATURE

In contrast to deprivation theory, importation theory of prison adjustment asserts inmate adjustment is the result of the unique characteristics inmates bring with them (i.e., import) to the institution (Innes, 1997). From this perspective, researchers are interested in factors that influence inmate assimilation within the prison (Lawson et al., 1996). Tests of the importation model have used demographic, criminal history, and other risk factors to explain institutional adjustment (Ellis, Grasmick, & Gillman, 1974; Harer & Steffensmeier, 1996; MacDonald, 1999; MacKenzie, 1987; Poole & Regoli, 1983).

From this perspective, subcultures within institutions are thought to mirror deviant subcultures existing outside prison environments (Irwin & Cressey, 1962). Many of these subgroups are formed based on one's race or ethnicity and have competing norms and values in the general population. These subgroups, which are extensions of subcultures formed before entering the institution, compete with one another for control in the prison environment (Jacobs, 1976; Stojkovic, 1984). Several studies have found that the competition among racial subgroups resulted in individual and collective acts of interracial violence (Carroll, 1974; Gaes & McGuire, 1985; Harer & Steffensmeier, 1996; Jacobs, 1976).

Importation theory assumes that prison misconduct can be predicted with the same factors that predict crime in general (Innes, 1997). Common risk factors for delinquency include family criminality and exposure to family violence (Buka & Earls, 1993; Farrington, 1989; Fergusson & Horwood, 1998; Lattimore, Visher, & Linster, 1995; Salmelainen, 1996). Juveniles with family members involved in criminal behavior or juveniles who were exposed to violence in the family are at a greater risk for future offending than are juveniles who did not have family members involved in crime or were not exposed to family violence. A third risk factor for future delinquency is prior substance abuse (see the following). All of these risk factors represent individual characteristics that juveniles import into institutions. In addition, age is a well-documented predictor of prison adjustment (Flanagan, 1980; MacKenzie, 1987). According to several studies, younger inmates are more likely than older inmates to poorly adjust, as measured by institutional misconduct.

Mills, Kroner, and Weeks (1998) examined the relationship between a self-reported measure of alcohol abuse (Alcohol Dependence Scale¹) and subsequent serious institutional maladjustment. The study found that offenders with substantial alcohol dependence (which has been indicative of polysubstance abuse) were more likely than those with other levels of dependence to be involved in serious institutional misconducts.

Prior criminal behavior has also been explored as a preprison characteristic that

predicts various types of misconducts (Flanagan, 1983; Myers & Levy, 1978; Poole & Regoli, 1983; Proctor, 1994; Shields & Simourd, 1991). Prior criminal history has been shown to consistently predict misconduct (Innes, 1997). Studies have operationalized prior criminal history with measures such as number of prior arrests, commitments, convictions, history of violence, seriousness of prior acts, and current offense.

A COMBINED MODEL OF IMPORTATION AND DEPRIVATION

Researchers have produced thousands of works in the attempt to explain the process by which inmates adjust to prison life. As shown earlier, scholars have identified factors both internal to the inmate and external to the institution's environment that influence inmate adjustment (Goodstein & Wright, 1991). The most efficient models are those that integrate factors from both importation and deprivation theories because neither model by itself adequately predicts inmate adjustment to confinement (MacDonald, 1999; Thomas et al., 1978; Zingraff, 1980). In fact, a meta-analysis of 39 studies that attempted to predict adjustment to the prison environment found personal and situational variables to be similar in their predictive ability (Gendreau, Goggin, & Law, 1997).

RESEARCH DESIGN

Research examining importation and deprivation factors has used various official outcome measures to examine prison adjustment including disciplinary infractions or drug/alcohol use (Van Voorhis, 1994). Prison adjustment, however, does not only involve problem behaviors but also involves emotional and attitudinal reactions. Official measures of misconduct have been shown to be flawed and represent only one measure of adjustment (Poole & Regoli, 1983). The majority of recent studies measuring official acts of misconduct may actually be measuring a different aspect of adjustment than that developed through a more psychological perspective. This article brings the literature back to examining psychological adjustment to institutions as opposed to only examining officially recorded misconduct.

In addition, as noted by MacDonald (1999), "Few studies, however, use data that have both aggregate and individual measures beyond a single institution" (p. 36). This research also addresses this concern and therefore extends the external validity of these findings. The goal of this research was to determine whether a combined model approach of importation and deprivation factors could predict institutional adjustment as measured by juveniles' levels of anxiety.

METHOD

SAMPLE

The data in this study represent a cross-sectional sample of 3,986 juveniles confined to 48 correctional facilities across the United States. Twenty-two of these facilities were traditional institutions such as training schools and detention facilities ($N = 1,582$), whereas the remaining 26 facilities were boot camp facilities ($N = 2,404$). The average age of these juveniles was approximately 16 years old. Thirty-five percent of the sample were Black, 32% were White, 19% were Hispanic, and 14% identified themselves as being in the Other racial category. Nearly all juveniles (96%) in the sample were male.

PROCEDURE

Data were collected during site visits to each institution between April 1997 and August 1998. Juveniles completed a self-report survey consisting of 266 questions that measured information regarding demographics, previous delinquent behavior, and attitudes and experiences in the facility.² Surveys were administered to groups of 15 to 20 juveniles in classroom-type settings. After survey materials were distributed to juveniles, the purpose of the research was carefully explained by the researchers. Juveniles watched a videotaped version of the survey that provided specific instructions for survey completion, hence standardizing the survey administration process. In addition to the video assisting juveniles with reading disabilities, researchers also

assisted juveniles in completing the surveys.

In addition to the juvenile surveys, structured interviews were conducted with administrators at each facility. The facility survey consisted of 244 procedural questions related to the institutions' population, programming components, and a variety of institutional characteristics.

VARIABLE DESCRIPTION

There were 22 variables that measured different aspects of individual importation factors as well as deprivation measures related to perceptions of the institutional environment and aggregate characteristics of the institutions (see Table 1). Twenty of the variables were self-reported by juveniles, and the remaining 2 were aggregate level measures given by facility administrators.

Conditions of confinement scales previously developed from these data were used in this analysis (see Styve, MacKenzie, & Gover, 1998). Tables for the four remaining scales (anxiety, family criminality, substance abuse, and family violence) are displayed in Table 2. Confirmatory principal components factor analysis was used to form these scales. Varimax factor analysis with pair-wise deletion of missing cases was performed.³ Questions included in each scale were identified according to the confirmatory factor analyses. The internal consistency of the items was determined by Cronbach's alpha reliability test. If reliability scores were within an acceptable range, the scores for the scales were computed controlling for missing data.⁴

Dependent variable. Institutional adjustment was measured through a six-item summated anxiety scale. Juveniles were asked to respond "yes" (coded as 1) or "no" (coded as 0) to questions that asked them if they felt calm, upset, anxious, nervous, relaxed, or worried. Scale items were drawn from Spielberger, Gorsuch, and Lushebe (1970).

Importation variables. Ten measures were used to capture the importation construct: number of previous arrests (#PREVARRESTS), number of previous commitments (#PREVCOMMITTS), family criminality (FAMCRIM), current offense

(OFFENSE), prior substance abuse (SUBUSE), exposure to family violence (FAMVIO), race (WHITE, HISPANIC, and OTHER) and age (AGE). Overall, the 10 importation measures were selected to indicate the length and seriousness of juveniles' criminal history, involvement in criminal subcultures, and factors associated with risk. Family criminality was measured with a four-item summated ordinal scale that asked questions such as whether the juvenile had family members who had been

TABLE 1
MEANS, NUMBER OF ITEMS, AND COEFFICIENT ALPHA FOR VARIABLES USED IN THE ANALYSIS

<i>Variable</i>	<i>Mean</i>	<i>(SD)</i>	<i>Number of Items</i>	<i>(Range)</i>	<i>efficient Alpha</i>
<i>Importation variables</i>					
#PREVARRES	7.74	(9.12)	NA		NA
#PREVCOMMITTS	3.17	(3.84)	NA		NA
FAMCRIM	2.15	(.64)	4	(1 to 3)	.65
OFFENSE	2.54	(1.16)	NA		NA
SUBUSE	1.47	(.27)	6	(1 to 2)	.72
FAMVIO	1.59	(.68)	9	(1 to 5)	.85
WHITE	.32	(.47)	NA		NA
HISPANIC	.19	(.39)	NA		NA
OTHER	.14	(.34)	NA		NA
AGE	16.16	(1.24)	NA		NA
<i>Deprivation variables</i>					
CONTROL	3.66	(.75)	9	(1 to 5)	.70
RESDANG	2.19	(.83)	8	(1 to 5)	.81
ENV DANG	2.71	(.96)	8	(1 to 5)	.73
ACTIVITY	3.80	(.88)	7	(1 to 5)	.77
QUALIFE	2.96	(.69)	10	(1 to 5)	.67
JUSTICE	3.07	(.77)	11	(1 to 5)	.77
FREEDOM	2.27	(.77)	7	(1 to 5)	.66
STRUCTURE	3.69	(.71)	10	(1 to 5)	.71
TIME IN FACILITY	4.04	(5.79)	NA		NA
FACILITY TYPE	.6	(.49)	NA		NA
<i>Aggregate deprivation measures</i>					
CROWDRATIO	3.66	(.75)	9	(1 to 5)	.70
STAFFRATIO	3.23	(5.29)	NA		NA

NOTE: NA = not applicable. #PREVARRESTS = number of previous arrests; #PREVCOMMITTS = number of previous commitments; FAMCRIM = family criminality; OFFENSE = current offense; SUBUSE = prior substance abuse; FAMVIO = exposure to family violence; WHITE, HISPANIC, and OTHER = race; AGE = age. CONTROL = level of institutional control; RESDANG = resident danger; ENV DANG = environmental danger; ACTIVITY = activity; QUALIFE = juveniles' quality of life within the institution; JUSTICE = justice; FREEDOM = freedom; STRUCTURE = institutional structure; TIME IN FACILITY = time in facility; FACILITY TYPE = type of facility. CROWDRATIO = level of crowding in the institution; STAFFRATIO = the staff to inmate ratio.

previously incarcerated or had prior gang involvement. These questions had three response choices (no = 1; uncertain = 2; yes = 3). Juveniles' current offense was an open-ended question that was recoded into a four-item ordinal offense scale (general

delinquency = 1; property = 2; drug = 3; violent = 4). The category “general delinquency” included minor offenses, probation violations, status offenses, escape/absent without leave (AWOL), children in need of assistance (CHINA), menacing, resisting arrest, and driving offenses.

TABLE 2
RESULTS FROM ADMINISTERED SCALES

<i>Factor Scale</i>	<i>Correlation</i>			
	<i>Score</i>	<i>Mean (SD)</i>	<i>Range</i>	<i>(item to total)</i>
Family Criminality Scale				
Have any of your family members been incarcerated for 30 days or longer?	.647	1.75 (.92)	1 to 3	.4163
Have any of the people you lived with prior to entering a facility for this offense ever been treated for a problem with drugs or alcohol?	.808	2.23 (.93)	1 to 3	.5401
Have any of the people you lived with prior to entering a facility for this offense ever abused drugs or alcohol?	.776	2.08 (.96)	1 to 3	.4912
Are any of your family members involved in a gang?	.516	2.43 (.87)	1 to 3	.2879
Total scale		2.15 (.64)	1 to 3	
Cronbach's alpha = .6515				
N = 3,891				
Substance Use Scale				
We would now like you to think about the 6 months before you entered a facility. Indicate whether you have used these substances:				
Alcohol (beer, wine, or hard liquor)	.653	1.20 (.4)	1 to 2	.4581
Tobacco (cigarettes, chewing tobacco, etc.)	.535	1.22 (.41)	1 to 2	.3521
Marijuana/hashish (pot, weed, grass, reefer, or blunts)	.630	1.17 (.38)	1 to 2	.4355
Crack/powder cocaine	.666	1.77 (.42)	1 to 2	.4678
Inhalants (paint thinner, glue, white out, whippets, or poppers)	.631	1.80 (.40)	1 to 2	.4379
Other	.733	1.63 (.48)	1 to 2	.5407
Total scale		1.47 (.27)	1 to 2	
Cronbach's alpha = .7157				
N = 2,931				
Family Violence/Child Abuse Scale				
How often did your mother or father slap you?	.728	2.06(1.13)	1 to 5	.6289
How often did your mother or father hit you?	.762	2.10(1.19)	1 to 5	.6692

TABLE 2 Continued

Factor Scale	Correlation				
	Score	Mean (SD)	Range	(item to total)	
How often were you burned by your mother or father?	.562	1.10 (.48)	1 to 5	.4499	
How often did you have bruises, cuts, or other evidence of punishment by your mother or father?	.832	1.49 (.96)	1 to 5	.7472	
How often were you scared or afraid of getting physically hurt by your mother or father?	.765	1.60(1.11)	1 to 5	.6642	
Would you say that you were unfed, unwashed, or generally unsupervised at home on some regular basis as a young child?	.603	1.33 (.87)	1 to 5	.4894	
How often did you witness one of your parents physically harm the other parent?	.641	1.63(1.10)	1 to 5	.5430	
How often did you witness a member of your family physically harm another family member?	.640	1.77(1.09)	1 to 5	.5346	
How often were you touched in a sexual way or forced to have sex by an adult or older child when you did not want this to happen?	.509	1.19 (.68)	1 to 5	.3481	
Total scale		1.59 (.68)	1 to 5		
Cronbach's alpha = .8467					
N = 3,920					
Anxiety Scale I feel calm.					
	.618	.27 (.45)	0 to 1	.4073	
I feel upset.	.710	.39 (.49)	0 to 1	.5112	
I feel anxious.	.378	.56 (.5)	0 to 1	.2393	
I feel nervous.	.688	.37 (.48)	0 to 1	.5026	
I am relaxed.	.728	.37 (.48)	0 to 1	.5235	
I am worried.	.697	.51 (.5)	0 to 1	.4970	
Total scale		.31 (.46)	0 to 1		
Cronbach's alpha = .7121					
N = 3,871					

The substance abuse scale measured the variety of drugs tried during the 6 months prior to the juveniles' commitment, as a proxy for the extent substance use. This summated scale contained six items with two response choices (no = 1; yes = 2). Exposure to family violence was captured with a nine-item Likert-type scale that measured the extent to which juveniles were neglected, physically abused, sexually abused, and whether they witnessed violence between family members. This scale contained a five-item Likert-type response (1 = *never*; 2 = *rarely*; 3 = *sometimes*; 4 =

often; and 5 = *frequently*). Juveniles' race was coded according to four groups: White, Hispanic, and Other, with Black being the reference group. The remaining importation variables (number of arrests, number of previous commitments, and age) were coded as continuous variables.

Deprivation variables. Twelve measures were used to capture the deprivation construct. These include eight perceptual measures of the facilities' conditions of confinement such as the level of institutional control (CONTROL), resident danger (RESDANG), environmental danger (ENV DANG), activity (ACTIVITY), juveniles' quality of life within the institution (QUALIFE), justice (JUSTICE), freedom (FREEDOM), and institutional structure (STRUCTURE).

The eight conditions of confinement variables were five-item summated Likert-type scales (1 = *never*; 2 = *rarely*; 3 = *sometimes*; 4 = *often*; and 5 = *always*). Control measured the level of security exerted over residents' activities and security used to keep residents in the facility. Resident danger measured residents' risk of being injured by other residents. Environmental danger measured the risk of being injured as a result of being institutionalized. Activity measured the level and variety of activities available to inmates. Quality of life measured the general social environment including a resident's ability to maintain some degree of individuality. Justice measured the perceived appropriateness and fairness of discipline procedures for misbehavior. Freedom measured the provision of choice of activities and movement of residents. Structure measured the formality of daily routines and interactions with staff and other residents. In addition to conditions of confinement, the length of juveniles' confinement (TIMEIN) was used as a deprivation factor (Goodstein & Wright, 1991). The length of juveniles' confinement at the time of the site visit was coded as a continuous variable and was self-reported by juveniles. Finally, this analysis examined differences between the types of juvenile facility (FACILITY) as a deprivation influence on adjustment. Facility type was coded as a dichotomous variable (0 = traditional facilities; 1 = boot camps).

Two aggregate level measures of deprivation were drawn from the interviews with the facility administrators. These include the level of crowding in the institution

(CROWDRATIO) and the staff to inmate ratio (STAFFRATIO). The aggregate crowding variable represents a ratio of the number of juveniles in the facility at the time of the site visit to the institution's overall capacity, as reported by facility administrators. The aggregate juvenile to staff variable represents a ratio of the number of juveniles for every one custody and treatment staff member.⁵ This ratio was computed according to facility administrators' reports of the numbers of employees in these staffing categories and juveniles in the facility at the time of the site visit.

RESULTS

DESCRIPTIVE STATISTICS

As reported in Table 1, juveniles in the sample had an average of three previous institutional commitments and almost eight prior arrests (7.74). Of those who reported their current offense, 24% were committed for general delinquency, 30% for property offenses, 15% for drug offenses, and 32% for violent offenses. The mean score for the family criminality scale was 1.59, whereas the mean score for the substance abuse scale was 1.47. The mean for the family violence scale was 1.59.

Of the conditions of confinement variables, the mean score for the activity scale was 3.80, and the mean score for the justice scale was 3.07. All means for the remaining conditions of confinement variables ranged from a low of 2.19 (RESDANG) to a high of 3.69 (STRUCTURE).

For the aggregate measures, the average crowding ratio was .97. In other words, the 48 facilities were at 97% capacity, on average. Also, the average staff to inmate ratio for all facilities was 3.23. In other words, there were 3.23 juveniles for every one custody and treatment staff member.

MULTIVARIATE ANALYSIS

The focus of this analysis was to estimate the relative impact of the importation and deprivation variables on inmate adjustment, as measured by anxiety. A K-means cluster analysis revealed that the anxiety scale grouped into two categories. Therefore,

the scale was collapsed into two levels to represent high (1) and low (0) measures of anxiety.⁶ Because the dependent variable was measured in dichotomous terms, the model violated several assumptions of ordinary least squares regression (OLS).⁷ Therefore, a probit model was used to estimate these data.

The results from the probit model shown in Table 3 indicate that both importation and deprivation factors significantly affected juveniles' levels of anxiety.⁸ To compare the relative influence of the independent variables, standardized probit coefficients (similar in interpretation to Beta coefficients in OLS) were also calculated. The second column of Table 3 displays the fully standardized coefficients (B^{xy}) that are used for interpreting the relative influence of the scale and continuous variables. The third column presents the y^* standardized coefficients (B^y), which are used for interpreting the relative influence of the binary independent variables (Long, 1997).⁹

The interpretation of the importation results indicates that juveniles were significantly more likely to have higher levels of anxiety if they were exposed to family violence as a child. For a standard deviation increase in exposure to family violence, anxiety increased by .18 standard deviations, holding all other variables constant. Next, White juveniles confined to institutions, compared to Black juveniles, were significantly more likely to experience higher levels of anxiety. Being White, compared to Black, increased anxiety by .19 standard deviations, holding all other variables constant. No significant differences were found in anxiety for juveniles who identified themselves as being Hispanic or in the Other racial category compared to Black juveniles. Lastly, juveniles confined to institutions were significantly less likely to be anxious as they got older. Each 1-year increase in age produced a .06 standard deviation decrease in anxiety, holding all other variables constant.

The interpretation of the deprivation measures indicated that as the activity levels in institutions increased, juveniles' levels of anxiety decreased. For a standard deviation increase in activity, anxiety decreased by .08 standard deviations, holding all other variables constant. Also, as the level of perceived justice increased, juveniles' levels of anxiety decreased. For a standard deviation increase in justice, anxiety decreased by .15

standard deviation units. Finally, juveniles confined to boot camp facilities, as opposed to traditional facilities, had significantly higher levels of anxiety. Being confined to a boot camp, compared to a traditional facility, increased anxiety by .18 standard deviations, holding all other variables constant. Although not statistically significant, all remaining conditions of confinement coefficients were in the expected direction, with the exception of the environmental danger variable.

TABLE 3 STANDARDIZED COEFFICIENTS FOR THE PROBIT MODEL FOR ANXIETY ($N = 3,986$)

<i>Variable</i>	β		β_{xy}	β_y
Importation variables				
#PREVARRES	-.000	-.003	—	
#PREVCOMMITTS	-.000	.000	—	
FAMCRIM	-.016	-.010	—	
OFFENSE	.002	.003	—	
SUBUSE	-.049	-.013	—	
FAMVIO*	.280	.184	—	
WHITE*	.201	—	.194	
HISPANIC	-.030	—	-.029	
OTHER	-.022	—	-.021	
AGE*	-.058	-.069	-.056	
Deprivation variables				
CONTROL	.068	.049	—	
RESDANG	.082	.065	—	
ENVDANG	-.023	-.022	—	
ACTIVITY*	-.099	-.084	—	
QUALIFE	-.058	-.039	—	
JUSTICE*	-.203	-.152	—	
FREEDOM	-.055	-.041	—	
STRUCTURE	-.042	-.029	—	
TIME IN FACILITY	-.002	-.012	—	
FACILITY TYPE*	.190	—	.184	
Aggregate deprivation measures				
CROWDRATIO		.219	.035	—
STAFFRATIO	.001	.006	—	

NOTE: β is an unstandardized coefficient; β_{xy} is a fully standardized coefficient; and β_y is y standardized coefficient. #PREVARRESTS = number of previous arrests; #PREVCOMMITTS = number of previous commitments; FAMCRIM = family criminality; OFFENSE = current offense; SUBUSE = prior substance abuse; FAMVIO = exposure to family violence; WHITE, HISPANIC, and OTHER = race; AGE = age. CONTROL = level of institutional control; RESDANG = resident danger; ENVDANG = environmental danger; ACTIVITY = activity; QUALIFE = juveniles' quality of life within the institution; JUSTICE = justice; FREEDOM = freedom; STRUCTURE = institutional structure; TIME IN FACILITY = time in facility; FACILITY TYPE = type of facility. CROWDRATIO = level of crowding in the institution; STAFFRATIO = the staff to inmate ratio.

Log-likelihood: -1179.08*.

* $p < .05$.

From the earlier analyses, it was apparent that facility type had a significant independent influence on anxiety. One method of examining the interaction between the

independent variables by facility type (boot camp vs. traditional) is to split the two samples and model them separately (see Long, 1997). To provide statistical justification for separating the combined (main effects) model into two separate facility type-distinct models, a log likelihood ratio test comparison was conducted. To compare the fit of the main effects model to the models separated by facility type, the following equation was used:

$$X^2 = | -2\loglikelihood_{Main} - (-2\loglikelihood_{boot\ camp} + -2\loglikelihood_{traditional}) |$$

Across models, the absolute difference between the -2 log likelihood of the main effects and combined facility type specific models were statistically significant at the $p < .01$ level on a chi-square distribution, in favor of the full model. This suggested that an examination of split models, according to facility type, was not justified (Long, 1997).

DISCUSSION AND CONCLUSION

This study measured the influence of selected importation and deprivation factors on the levels of self-reported anxiety among a cross-sectional national sample of institutionalized juveniles. It is important to identify juveniles with high levels of anxiety because extreme emotional reactions to confinement may interfere with rehabilitation programs. This study found that age, race, history of exposure to family violence, perceived levels of institutional activity and justice, and the type of facility all contributed to explaining the level of self-reported anxiety among institutionalized youth. These findings were consistent with prior literature in noting that older inmates are more able to cope with the pains of confinement (MacKenzie, 1987; Sykes, 1958). The influence of race was also consistent with prior literature in noting the importance of race as a covariate of adjustment. It is interesting to note, however, that in this study, the race effect was reversed from those examining adjustment through measures of violence and other official acts of misconduct (Harer & Steffensmeier, 1996; Innes, 1997). Whereas these other studies found Black inmates to be significantly more likely to act aggressively and break institutional rules, this analysis indicated that White juveniles were significantly more likely to exhibit higher levels of anxiety. Not surprisingly, the

influence of exposure to family violence suggested that different prior life experiences affect self-reported anxiety and provided further support for the importation theory.

In addition to the influence of these importation variables, variations within both perceived levels of institutional activities and justice also exerted a statistically significant influence. These findings provide support for the deprivation theory in that juveniles' perceptions of the environment where they were confined influenced their level of anxiety.

In addition to these individual measures, the type of facility also exerted a statistically significant influence on juveniles' adjustment. Specifically, the multi-variate probit analysis indicated that boot camp environments, compared to traditional facilities, substantially increased levels of anxiety among juvenile offenders. This finding is not surprising when one takes into consideration the nature and variation of the incorporation of the military philosophy within a boot camp environment. As noted by critics, many boot camp environments are characterized by confrontational atmospheres that may heighten anxiety levels among institutionalized youth (Morash & Rucker, 1990). These findings may also be explained by prior research that found that youth confined to boot camps spend fewer hours each week in treatment activities, compared to juveniles in traditional facilities (Gover, Styve, & MacKenzie, 1999).

Altogether, these results suggest that neither theory alone adequately explained how an institutionalized juvenile adjusted to the pains of confinement. The strongest model of institutional adjustment appeared to be one that incorporates tenants from both importation and deprivation theories.

NOTES

1. The Alcohol Dependence Scale was administered to inmates during intake.
2. Researchers adhered to strict human subject procedures, as required by the University of Maryland and individual facilities.
3. Varimax rotation was used because it was assumed the most interpretable factor has numerous high and low loadings but few intermediate values (Comrey & Lee, 1992).

This occurs because the variance of the variables is maximally spread apart. In the majority of cases, items were dropped if they did not load on a factor as .30 or greater.

4. Scales were computed by adding the scores of the questions in the scale together for each individual, then dividing by the number of questions in that scale. If an individual failed to answer more than 20% of the questions contained in the scale, the case was excluded for the overall analysis. If the individual answered more than 80% of the questions but fewer than 100% of the questions, the number of questions answered was considered in the scale information. There was fewer than 10% missing data for all of the juvenile scales.
5. From the administrators' responses to facility survey question, it was difficult to distinguish between staff members who were specifically assigned to custodial responsibilities versus treatment responsibilities. Because the majority of custody staff in juvenile institutions also had counseling and treatment responsibilities, these two staffing categories were combined.
6. Before dichotomizing the summated scale responses, the distribution of these responses were analyzed and found to be in violation of the ordinary least squares (OLS) assumption of homoscedasticity (error terms have a constant variance). Therefore, it was reconciled that the dependent variable should be modeled according to a latent dependent variable, or the underlying propensity of anxiety, which did not require the assumption of homoscedasticity (see Long, 1997).
7. The probit model has some desirable properties as a maximum likelihood estimator such as being consistent and asymptotically normal and asymptotically efficient—meaning that these properties hold as the sample size approaches ∞ (Long, 1997). The likelihood equation is represented by the following: $L(\beta | y, X) = \prod_{y=1} F(x\beta_i) \prod_{y=0} [1 - F(x\beta_i)]$.
8. Significance levels were interpreted at $p < .05$.
9. These measures were derived from the following equations: $\beta_k^{xy} = \sigma_k \beta_k / \sigma_y^*$; and $\beta_k^y = \beta_k / \sigma_y^*$, where σ_y^* is the unconditional standard deviation for y^* (Long, 1997). These calculations were done through a subroutine for STATA 5.0.

REFERENCES

- Buka, S., & Earls, F. (1993). Early determinants of delinquency and violence. *Health Affairs, 12*(4), 46-64.
- Carroll, L. (1974). *Hacks, Blacks, and cons*. Washington, DC: Health Company.
- Comrey, A., & Lee, H. (1992). *A first course in factor analysis* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Ellis, D. (1984). Crowding and prison violence. *Criminal Justice and Behavior, 11*, 277-308.
- Ellis, D., Grasmick, H., & Gillman, B. (1974). Violence in prisons: A sociological analysis. *American Journal of Sociology, 80*, 16-43.
- Farrington, D. (1989). Early predictors of adolescent aggression and adult violence. *Violence and Victims, 4*, 79-100.
- Feld, B. (1981). A comparative analysis of organizational structure and inmate subcultures in institutions for juvenile offenders. *Crime and Delinquency, 27*, 36-363.
- Fergusson, D., & Horwood, L. (1998). Exposure to interparental violence in childhood and psychosocial adjustment in young adulthood. *Child Abuse and Neglect, 22*, 339-357.
- Flanagan, T. (1980). Time served and institutional misconduct: Patterns in involvement in disciplinary infractions among long-term and short-term inmates. *Journal of Criminal Justice, 8*, 357-367.
- Flanagan, T. (1983). Correlates of institutional misconduct among state prisoners. *Criminology, 21*, 29-39.
- Gaes, G., & McGuire, W. (1985). Prison violence: The contribution of crowding versus other determinants of prison assault rates. *Journal of Research in Crime and Delinquency, 22*, 41-65.
- Garabedian, P. (1963). Social roles and processes of socialization in the prison community. *Social Problems, 11*, 139-152.
- Gendreau, P., Goggin, C., & Law, M. (1997). Predicting prison misconducts. *Criminal*

Justice and Behavior, 24, 414-431.

- Goodstein, L., & Wright, K. (1991). Inmate adjustment to prison. In L. Goodstein & D. L. MacKenzie (Eds.), *The American prison* (pp. 229-251). New York: Plenum.
- Gover, A., MacKenzie, D., & Styve, G. (2000). Boot camps and traditional correctional facilities for juveniles: A comparison of the participants, daily activities, and environments. *Journal of Criminal Justice*, 28, 53-68.
- Gover, A., Styve, J., & MacKenzie, D. (1998). Evaluating correctional boot camp programs: Issues and concerns. In K. Haas & G. Alpert (Eds.), *The dilemmas of corrections* (pp. 384-402). Prospect Heights, IL: Waveland.
- Gover, A., Styve, J., & MacKenzie, D. (1999). Prison programming—Boot camp. In P. Carlson & J. Simon Garrett (Eds.), *Prison and jail administration: Practice and theory* (pp. 275-286). Gaithersburg, MD: Aspen.
- Harer, M., & Steffensmeier, D. (1996). Race and prison violence. *Criminology*, 34, 323-355.
- Hepburn, J., & Albonetti, C. (1980). Role conflict in correctional institutions. *Criminology*, 17, 445-459.
- Innes, C. (1997). Patterns of misconduct in the federal prison system. *Criminal Justice Review*, 22, 157-171.
- Irwin, J., & Cressey, D. (1962). Thieves, convicts, and the inmate culture. *Social Problems*, 10, 142-155.
- Jacobs, J. (1976). Stratification and conflict among prison inmates. *Journal of Criminal Law and Criminology*, 66, 476-482.
- Lattimore, P., Visher, C., & Linster, R. (1995). Predicting rearrest for violence among serious youthful offenders. *Journal of Research in Crime and Delinquency*, 32, 54-83.
- Lawson, D., Segrin, C., & Ward, T. (1996). Relationship between prisonization and social skills among prison inmates. *The Prison Journal*, 76, 293-309.
- Long, J. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage.
- MacDonald, J. (1999). Violence and drug use in juvenile institutions. *Journal of Criminal*

Justice, 27, 33-44.

- MacKenzie, D. (1987). Age and adjustment to prison: Interaction with attitudes and anxiety. *Criminal Justice and Behavior*, 14, 427-447.
- MacKenzie, D., & Goodstein, L. (1986). Stress and the control beliefs of prisoners: A test of three models of control-limited environments. *Journal of Applied Social Psychology*, 16, 209-228.
- MacKenzie, D., Styve, G., & Gover, A. (1998). Performance-based standards for juvenile corrections. *Corrections Management Quarterly*, 2, 28-35.
- McCorkle, R., Miethe, T., & Kriss, A. (1995). The roots of prison violence: A test of the deprivation, management, and "not-so-total" institution models. *Crime and Delinquency*, 41, 317-331.
- Mills, J., Kroner, D., & Weeks, J. (1998). Measuring alcohol abuse and the incidence of serious misconduct in violent offenders. *The Prison Journal*, 78, 45-54.
- Moos, R. (1971). Differential effects of the social climates of correctional institutions. *Journal of Research in Crime and Delinquency*, 7, 71-82.
- Morash, M., & Rucker, L. (1990). A critical look at the ideal of boot camp as a correctional reform. *Crime and Delinquency*, 36, 204-222.
- Myers, L., & Levy, G. (1978). Description and prediction of the intractable inmate. *Journal of Research in Crime and Delinquency*, 15, 214-228.
- Parisi, N. (1982). Prisoner's pressures and responses. In N. Parisi (Ed.), *Coping with imprisonment: Perspectives in criminal justice* (pp. 9-26). Beverly Hills, CA: Sage.
- Poole, E., & Regoli, R. (1983). Violence in juvenile institutions. *Criminology*, 21, 213-232.
- Proctor, J. (1994). Evaluating a modified version of the federal prison system's inmate classification model. *Criminal Justice and Behavior*, 21, 256-272.
- Salmelainen, P. (1996). Child neglect: Its causes and its role in delinquency. *Crime and Justice Bulletin*, 33, 1-15.
- Shields, I., & Simourd, D. (1991). Predicting predatory behavior in a population of

- incarcerated young offenders. *Criminal Justice and Behavior*, 18, 180-194.
- Smith, C., & Hepburn, J. (1979). Alienation in prison organizations. *Criminology*, 14, 251-262.
- Spielberger, C., Gorsuch, R., & Lushene, R. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychological Press.
- Stojkovic, S. (1984). Social bases of power and control mechanisms among correctional administrators in a prison organization. *Journal of Criminal Justice*, 14, 157-166.
- Styve, G., MacKenzie, D., & Gover, A. (1998, November). *Environmental perceptions and adjustment in juvenile correctional institutions: A national evaluation*. Paper presented at the Annual Meeting of the American Society of Criminology, Washington, DC.
- Sykes, G. M. (1958). *The society of captives*. Princeton, NJ: Princeton University Press.
- Sykes, G., & Messinger, S. (1960). The inmate social system. In R. Cloward (Ed.), *Theoretical studies in social organization of the prison* (pp. 5-19). New York: Social Science Research Council.
- Thomas, C., Peterson, D., & Zingraff, R. (1978). Structural and social psychological correlates of prisonization. *Criminology*, 16, 383-393.
- Thomas, C., & Zingraff, M. (1976). Organizational structure as a determinant of prisonization. *Pacific Sociological Review*, 19, 98-116.
- Van Voorhis, P. (1994). Measuring prison disciplinary problems: A multiple indicators approach to understanding prison adjustment. *Justice Quarterly*, 11, 679-709.
- Walker, F., & Gilmour, D. (1984). The relationship between interpersonal distance and violence in imprisoned offenders. *Criminal Justice and Behavior*, 11, 331-340.
- Wellford, C. (1967). Factors associated with adoption of the inmate code: A study of normative socialization. *Journal of Criminal Law, Criminology, and Police Science*, 58, 197-203.
- Wheeler, S. (1961). Socialization in correctional communities. *American Sociological Review*, 26, 697-712.
- Wormith, J. (1984). Personal space of incarcerated offenders. *Journal of Clinical*

Psychology, 40, 815-827.

Wright, K. N. (1991). A study of individual, environmental, and interactive effects in explaining adjustment to prison. *Justice Quarterly, 8, 217-242.*

Zamble, E., & Porporino, F. (1988). Coping behavior and adaption in prison inmates. New York/Berlin: Springer-Verlag.

Zamble, E., & Porporino, F. (1990). Coping, imprisonment, and rehabilitation: Some data on their implications. *Criminal Justice and Behavior, 17, 53-70.*

Zingraff, M. (1980). Inmate assimilation: A comparison of male and female delinquents. *Criminal Justice and Behavior, 7, 275-292.*

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