ADAPTATION TO IMPRISONMENT

Indigenous or Imported?

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The study investigated the effects of time spent in prison and quality of life before prison on male, federally sentenced prisoners' adaptations to imprisonment, controlling for sentence length and prison security level. Data consisted of responses on a self-administered survey completed by 712 prisoners. Findings tended to support the independent effects of the indigenous (deprivation) and importation approaches rather than their interaction effects. Time spent in prison had a direct effect on prisoners' participation in programs, their thoughts of needing control over their lives, their feelings of hopelessness, and their disciplinary infractions in prison. Prisoners' quality of life before prison had a direct effect on their participation in programs, their feelings of happiness, and their prison infractions. Finally, time spent in prison and quality of life before prison interacted to affect prisoners' contact with their family and friends.

Keywords: deprivation model; importation model; prisoner adaptation; disciplinary infractions; prison regime; prison security; psychological adjustment

There has been great interest in how people adjust to prison life. Researchers have discussed the "pains" of imprisonment, described the characteristics of more or less adjusted prisoners, and explained how and why people may adapt to conditions of confinement (e.g., Clemmer, 1940; Irwin & Cressey, 1962; Sykes, 1958; Toch, 1977; Zamble & Porporino, 1988). In addition, prisoners themselves have documented the experience of adjustment to imprisonment (see Johnson & Toch, 2000). The patterns of adaptation to imprisonment can have significant implications. For example, disciplinary infractions in prison have been found to be predictive of recidivism (Gendreau, Little, & Goggin, 1996), whereas participation in prison education programs and maintenance of family ties are associated with reductions in recidivism (Gerber & Fritsch, 1995; Hairston, 1991). The extent to which adaptations are influenced by the prison environment itself (i.e., are indigenous) or influenced by the prisoner's preprison characteristics (i.e., are imported) has been a matter of considerable debate. In this article, we investigate specific adaptations to imprisonment as a function of time spent in prison and quality of life before prison, with the goal of examining the relative and interactive explanatory power of these two influences.

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Early research on adaptations to imprisonment focused on Clemmer's (1940) concept of *prisonization*, defined as "the taking on in greater or lesser degree of the folkways, mores, customs, and general culture of the penitentiary" (p. 270). Although there is continued interest in prisonization (e.g., Paterline & Petersen, 1999; Reisig & Lee, 2000) following the classic work of authors such as Wheeler (1961) and Thomas (1977), researchers are now examining specific behavioral responses to imprisonment as well as psychological and emotional reactions. To what extent do prisoners participate in regime activities and programs, socialize with other inmates, interact with corrections officers, have contact with their families, and adhere to prison rules? What do prisoners think about their confinement, and how do they feel? Recent research implicitly and explicitly addresses the effects of both indigenous and imported factors on these specific types of adaptations (see also Goodstein & Wright, 1989). We will focus on adult male prisoners, as they are the subjects of the empirical analysis.

THEORETICAL APPROACHES TO ADAPTATION

The indigenous approach. According to the indigenous approach (also known as the deprivation model), the pains of imprisonment or deprivations suffered in prison are the primary influence on an individual's responses to imprisonment (Goffman, 1961; Sykes, 1958; Sykes & Messinger, 1960). Prisoners are deprived of their liberty and restricted in their movement, heterosexual relationships, and relationships with family and friends. They also experience a loss of control and a lack of previously enjoyed goods and services and personal security and safety. Flanagan (1980a) found that prisoners ranked missing somebody as the most severe problem (see also Zamble, 1992), followed by missing social life, feeling that life is wasted, and missing sex. Wright (1989) reported that prisoners ranked support as their highest need or concern, followed by emotional feedback, activity, structure, safety, social stimulation, freedom, and privacy (see also Toch, 1977). The explanatory potential of the indigenous approach may be tested by examining the association between adaptations and aspects of confinement, such as type of prison and amount of time spent in prison.

Different patterns of adaptation have emerged when examining prisoners who have spent different amounts of time in prison. For example, first-time, short-term prisoners demonstrate limited behavioral adaptations (Schmid & Jones, 1993). Zamble (1992) found that, over time, long-term prisoners increased participation in work and other regime activities and reduced casual socialization with other inmates (see also Zamble & Porporino, 1988). Their level of contact with their family and friends from the outside remained constant. Furthermore, there were reduced feelings of hopelessness over time, and disciplinary infractions in prison also declined. Long-term prisoners have also been shown to immerse themselves in the daily routine of prison life, hiding their vulnerabilities, and losing contact with the outside world (Cobden & Stewart, 1984). Sapsford (1978) found that contact with family and friends declined as the length of time served increased after controlling for preprison relationships. In addition, Adams et al. (1994) found that time served was positively related to the hours of participation in a prison education program (but see Sapsford, 1978), and Sappington (1996) reported that time spent in prison was positively correlated with the number of disciplinary charges (but see Flanagan, 1980b). Finally, MacKenzie and Goodstein (1985) found no deterioration over time in terms of depression in long-term prisoners, although the early period was more stressful.

Time spent in prison may be associated with factors such as sentence length and prison security level, which have been shown to affect adaptations (e.g., Lutze, 2001; McCorkle, Miethe, & Drass, 1995). Thus, studies investigating the temporal course of adaptation must control for these variables. In addition, some of the findings are inconsistent, which may partly be because of differences in how researchers operationally define the predictor/independent and criterion/dependent variables. The indigenous approach also cannot explain the fact that there are differences in adaptation patterns among individuals who have served approximately the same amount of time in prison, are at a similar point in their sentence, and live in a comparable prison environment.

The importation approach. According to the importation approach, adaptation to imprisonment is largely imported and reflects the lifestyles and other preprison characteristics of prisoners (Irwin, 1970; Irwin & Cressey, 1962). A 1997 survey of inmates in U.S. federal correctional facilities reveals that of males, 30% were married, 49% had graduated from high school and attended some college, 74% had used drugs "ever," and 31% had a "binge drinking experience" (Bureau of Justice Statistics, 2000). The validity of the importation approach may be tested by examining the association between adaptation and prisoners' preprison characteristics, such as their education, employment, relationships, drug and/or alcohol use, and previous imprisonment.

Researchers have examined the effect of education and employment on various adaptations and have found evidence for importation. For example, Wright (1989) found that, independent of race, prisoners who did not go beyond high school education had fewer physical problems (e.g., taken advantage of or hurt by other inmates) and had more disruptive infractions in prison. Prisoners who were previously unemployed had more internal and physical problems (signs of distress), assault and disruptive infractions, and external problems. Similarly, Finn (1995) reported that urban background and economic deprivation were positively related to disciplinary infractions in prison, whereas race and prior imprisonment were not. Preprison education level has been shown to be negatively related to depression, anxiety, and discipline in prison, whereas factors such as age and prior imprisonment have not (Porporino & Zamble, 1984).

It is possible that various features of an individual's life before prison combine to affect the adaptation to imprisonment. For example, a male who did not finish high school, was unemployed, took drugs, and did not have any personal relationships before prison may adapt differently to imprisonment than his counterpart who was better adjusted to life before prison. However, studies of individual preprison characteristics may not have the power to detect the combined effects of this general poor quality of life before prison.

Theoretical synthesis. Some researchers have tested the relative validity of the indigenous and importation approaches in single studies (e.g., Camp, Gaes, Langan, & Saylor, 2003; Frottier, Ritter, Fruhwald, Lehr, & Bauer, 2001; Gillespie, 2003; Harer & Steffensmeier, 1996; Paterline & Petersen, 1999; Thomas, 1977). Cao, Zhao, and van Dine (1997) found that measures of the importation approach (i.e., age, gender, race, and marital status) were better predictors of prison rule violations than measures of the indigenous approach (i.e., prison security level, indeterminate sentence, and sentence length). However, several measures of the importation approach—namely, education, employment, mental illness, substance abuse, county, the number of violent offenses, and prior incarceration history—were not significant predictors. Jiang and Fisher-Giorlando (2002) demonstrated that the indigenous approach explained less violent behavior and fewer disciplinary infractions against staff and other

inmates in prison than the importation approach. However, some measures of the importation approach (i.e., race and age) were not significant predictors of these incidents, whereas prison security level (a measure of the indigenous approach) was a significant predictor. Camp et al. (2003) reported a similarly mixed set of findings.

Rather than adopting an either/or approach to understanding adaptations to imprisonment, a few researchers have examined the interactive effects of the indigenous and importation approaches (Toch, 1977; Toch & Adams, 1989; Wright, 1991). Both approaches are viewed as compatible because life before prison can help to shape how inmates experience and respond to deprivations. However, Wright (1991) found that the interaction between person and environment was not a significant predictor of disciplinary infractions in prison or prisoners' internal problems (e.g., stress), although it did predict prisoners' external (e.g., fighting) and physical (e.g., injury) problems. Thus, the question of the predictive power of the two approaches remains open. Furthermore, to date, no one has explicitly examined the relative and interactive effects of *both* approaches on a variety of responses to imprisonment in a single study.

THE PRESENT STUDY

We investigated U.S. federally sentenced prisoners' behavioral, social, psychological, and emotional adaptations to imprisonment as a function of (a) the time they had served for the current prison sentence and (b) their general quality of life before prison. The goal was to examine the relative explanatory power of the indigenous and importation approaches and the effects of their interaction. We controlled for sentence length and prison security level because both are likely to covary with time spent in prison.

INDEPENDENT VARIABLES

Time spent in prison was measured in terms of the number of years served for the current sentence. Quality of life before prison was measured in terms of five variables that were aggregated (see also Wright, 1991): whether or not prisoners had finished high school education, were employed, had an intimate relationship, used drugs, and had previously been in prison. Although research indicates that other preprison characteristics such as age (Batchelder & Pippert, 2002; MacKenzie, 1987; Sappington, 1996) and offense (Batchelder & Pippert, 2002) have an impact on various adaptations, we largely focused on preprison characteristics that reflect a maladjusted individual and that are dynamic. Indeed, postrelease programs target such characteristics (see Travis, Soloman, & Waul, 2001). A positive response was coded as 1 and a negative response as –1 (reverse coding was employed for the drugs and prior imprisonment variables). As there is no conclusive empirical evidence to suggest otherwise, we assumed equal weight for each component.

The two covariates were respectively measured in terms of the length of a prisoner's sentence in years and the level of security of the prison in which he was accommodated (i.e., low, medium, and high security).

DEPENDENT VARIABLES

Adaptations to imprisonment were defined in terms of five categories of 13 variables: (a) regime (i.e., number of regime activities participated in and number of programs attended),

(b) contact (i.e., amount of contact with other inmates and corrections officers, and frequency of contact with family and/or friends from the outside), (c) thoughts (i.e., frequency of thoughts about missing freedom, needing control over life, missing sex, missing family and/or friends, and being attacked or beaten), (d) emotions (i.e., degree of happiness and hopelessness), and (e) misconduct (i.e., number of disciplinary infractions in prison or prison rule violations).

METHOD

PARTICIPANTS

We surveyed 712 federally sentenced, adult male prisoners from three prisons (i.e., low, medium, and high security) on the West coast of the United States. In each prison, prisoners were randomly selected from the prison roll. The 712 prisoners represented an 80.91% response rate. Table 1 presents the demographic characteristics of the sample. In addition, around one fifth of the sample (21.21%) was in a low-security prison, 44.94% was in a medium-security prison, and 33.85% was in a high-security prison. The mean length of sentence was 9.15 years (SD = 7.73). At time of data collection, the mean length of sentence served was 4.39 years (SD = 3.98). Before prison, 66.57% (n = 474) of our sample had completed high school education, 16.62% (n = 118) were employed, 79.71% (n = 568) had an intimate relationship, 65.46% (n = 466) had used drugs, and 47.80% (n = 340) had been in prison before.

Based on a comparison of the 1997 figures (Bureau of Justice Statistics, 2000), the sample is representative of U.S. male federal prisoners in terms of the majority being older than 24 years, having had a past criminal record, and having used drugs; one third being White; and the relative proportion of prisoners who had committed a violent, property, or drug-related offense. However, the sample differed in terms of being more likely to have finished high school and to have had an intimate relationship before prison.

SURVEY

Prisoners completed a four-part survey titled *Life in Prison and a Future Outside* that was pilot tested and that also has been used in England by the authors. Items in Parts 1, 2, and 4 were used in the present study. (Part 3 asked prisoners about their forecasts of their life on the outside after release.) Part 1 ("Your Life in This Prison") included items that measured adaptations to imprisonment. For our purposes, the items were grouped according to the five categories of 13 dependent variables as follows:

1. Regime: Prisoner reported how many regime activities—namely, education, employment, gym, and religion—that they had participated in. Prisoners also reported how many of a list of eight common prison programs, such as anger management and quitting drugs, they had participated in (we also included an "other" category).
2. Contact: Prisoners rated how much they interacted with other inmates and corrections officers, each on a 7-point scale marked *not at all*, *somewhat*, and *a lot*, at the beginning, midpoints, and endpoints. Then prisoners rated how often they had contact with friends and/or family from the outside (i.e., via telephones, letters, and visits) on a 9-point scale with 2-point intervals marked from *never*, *rarely*, *sometimes*, and *often*, to *constantly*.
3. Thoughts: Prisoners rated how often they thought of missing their freedom, needing control over their life, missing sex, missing their family and/or friends, and being attacked/beaten,

TABLE 1: Demographic Characteristics of Sample (*N* = 712)

Characteristics	*Prisoner*
Ethnicity	
White	30.90%
Hispanic	30.76%
Black	21.89%
Asian	5.01%
Other	11.44%
Most serious current offense	
Against person	24.50%
Against property	2.02%
Drug-related	47.84%
Fraud/forgery/white-collar	9.51%
Firearm possession	4.76%
Illegal immigrant	6.34%
Other	5.04%
Most serious past offense[a]	
Against person	44.66%
Against property	10.92%
Drug-related	31.80%
Fraud/forgery/white-collar	3.16%
Firearm possession	1.46%
Illegal immigrant	2.67%
Other	5.34%
Mean age (years)	38.32
Standard deviation	10.88
Mean proportion of sentence served	53.44%
Standard deviation	23.95
Mean number of past offenses	1.12
Standard deviation	1.34
Mean number of past sentences	
Custodial	0.97
Noncustodial	0.82
Standard deviation	
Custodial	1.49
Noncustodial	2.44
Mean age at first imprisonment (years)	28.78
Standard deviation	11.38
Mean life in prison in years	7.05
Standard deviation	6.32

a. $n = 412$.

each measured on 9-point scales with 2-point intervals marked from *never*, *rarely*, *sometimes*, and *often*, to *always*.

4. Emotions: Prisoners rated how they were currently feeling in prison in terms of being happy and hopeless, each measured on 9-point scales marked *much less*, *same as before prison*, and *much more* at the beginning, midpoints, and endpoints.
5. Misconduct: Prisoners rated how often they had been charged with disciplinary infractions in prison on a 7-point scale marked *never*, *sometimes* and *often* at the beginning, midpoints, and endpoints.

Part 2 of the survey ("Your Offense and Sentence") requested details of a prisoner's current offense type, sentence length, and time served for the current offense. Prisoners were

also asked to report their number of previous convictions, type of past offenses, number of previous custodial and noncustodial sentences, age at first prison sentence, and how many years of their life they had spent in prison in total.

Finally, Part 4 ("Your Past Life Outside Prison") obtained information on other aspects of a prisoner's life before prison (including demographic variables; see Table 1). These included whether prisoners had finished high school, were employed, had had an intimate relationship, and had used drugs.

PROCEDURE

A trained researcher collected the survey data. Prisoners were introduced to the survey aims and invited to participate. They were instructed that they would not face any negative consequences for choosing not to participate, and only those who volunteered to participate did so. Confidentiality and anonymity of responses were assured by asking prisoners not to put any identifying details on the surveys and informing them that the completed surveys would be placed in secure storage accessed only by research staff. It was stressed that the researchers were bound by codes of ethics on these matters, and volunteers had to sign a separate informed consent form. The survey was self-administered in groups of approximately 20 prisoners in the education or chapel areas of prisons and in the absence of corrections officers. Finally, interpreters were provided for Hispanic-only speaking prisoners, and the researcher administered the survey individually to self-identified illiterate prisoners. The survey took approximately 30 to 45 minutes to complete.

ANALYSIS

Analysis of covariance (ANCOVA) and multivariate analysis of covariance (MANCOVA) were used to measure the effects of time spent in prison and quality of life before prison on the five categories of dependent variables (i.e., regime, contact, thoughts, emotions, and misconduct), controlling for sentence length and prison security level as covariates in the analysis.[1] ANCOVA is an extension of analysis of variance in which the effects of independent variables and their interactions are tested after controlling for the effects of covariates (Tabachnick & Fidell, 2001). MANCOVA is a generalization of ANCOVA when there are multiple correlated dependent variables. It tests whether a linear combination of these variables vary as a function of the independent variable after controlling for the effects of covariates. The alpha level was set at .05 for the statistical tests presented here, and Pillai's Trace was used as the multivariate statistic. For the time-spent-in-prison variable, which has more than two levels (as described below), pairwise comparisons were conducted on the dependent variables with Bonferroni correction after controlling for the covariates.

To aid statistical analysis, time spent in prison was divided into three relatively equally sized groups that also reflected categories of time spent in prison commonly used by researchers and prison policy makers: 2 years or less, 2.01 to 5 years, and more than 5 years. Thus, 34.47% of prisoners in the sample had served 2 years or less, 35.47% had served 2.01 to 5 years, and 30.06% had served more than 5 years. The quality-of-life-before-prison variable was divided into two groups representing prisoners with a 0 or negative score (i.e., indicating that they did not finish high school, were unemployed, were single, used drugs, and/or had been in prison before—namely, had some or all aspects of a *poor* quality of life before prison) and prisoners with a positive score (i.e., had some or all aspects of a *good* quality of

life before prison). Here, 29.63% of prisoners in the sample could be described as having a poor quality of life before prison and the remaining 70.37% as having a good quality of life before prison. Finally, length of sentence was divided into two groups simply using a median split (median = 6.50 years), and consequently, the sentence length was 6.42 years or less for half of the sample, and 6.50 to 50 years for the other half. The three categories of prison security level remained intact.

RESULTS

EFFECTS OF TIME SPENT IN PRISON AND QUALITY OF LIFE BEFORE PRISON

Regime. The number of regime activities and programs in which prisoners participated were moderately correlated ($r = .29$). There were no significant effects of either of the two covariates, sentence length and prison security level, on the regime variable ($ps > .05$). The multivariate test showed that the main effects of time spent in prison and quality of life before prison on the regime variable (i.e., the combination of the activities and programs variables) were both significant, $F(4, 1358) = 3.03$, $p = .017$, partial $\eta^2 = .01$ and $F(2, 678) = 4.10$, $p = .017$, partial $\eta^2 = .01$, respectively. The interaction effect of time spent in prison by quality of life before prison was nonsignificant ($p > .05$). Consistent with each of the indigenous and importation approaches, the univariate F tests revealed that there was a significant main effect of time spent in prison and quality of life before prison on the number of programs attended, $F(2, 679) = 5.02$, $p = .007$, partial $\eta^2 = .02$ and $F(1, 679) = 6.74$, $p = .002$, partial $\eta^2 = .01$, respectively. Specifically, pairwise comparisons on the means suggested that, after controlling for sentence length and prison security level, prisoners who had spent 2 years or less in prison reported participating in fewer programs than the two groups who had spent more than 2 years in prison (see Table 2). Furthermore, prisoners with a poor quality of life before prison participated in a greater number of programs in prison compared to those with a good quality of life before prison (see Table 2).

Contact. The correlations among measures of contact with other inmates, corrections officers, and family or friends from the outside ranged from $r = .10$ to .12. There was no significant effect on the contact variable of the two covariates sentence length and prison security level ($ps > .05$). The multivariate test showed a significant interaction effect of time spent in prison by quality of life before prison on the contact variable, $F(6, 1364) = 3.38$, $p = .004$, partial $\eta^2 = .02$. The main effect of time spent in prison was nonsignificant ($p > .05$), whereas that for quality of life before prison was significant, $F(3, 681) = 4.87$, $p = .002$, partial $\eta^2 = .02$. Supporting past research attempting a theoretical synthesis of the indigenous and importation approaches, the univariate F tests indicated that, after controlling for sentence length and prison security level, there was a significant interaction effect of time spent in prison by quality of life before prison on the amount of contact prisoners had with their family or friends, $F(2, 683) = 7.32$, $p = .001$, partial $\eta^2 = .02$. As Figure 1 illustrates, prisoners with a good quality of life before prison who had spent 2 years or less in prison reported having more frequent contact with their family and friends from the outside than prisoners with a poor quality of life before prison who had spent a comparable amount of time in prison. However, there was little difference in the reported frequency of contact with family and friends between prisoners with a poor and good quality of life before prison who had spent more than 5 years in prison.

TABLE 2: Means and Standard Deviations of Dependent Variables by Time Spent in Prison and Quality of Life Before Prison

	Time Spent in Prison							
	2 Years or Less		*2.01 to 5 Years*		*5 Plus Years*		*Total*	
	M	SD	M	SD	M	SD	M	SD
Regime activities								
Poor life before	2.64	0.88	2.85	0.95	2.59	0.94	2.70	0.93
Good life before	2.69	0.91	2.80	0.97	2.80	0.94	2.76	0.94
Total	2.68	0.90	2.82	0.96	2.73	0.94	2.74	0.93
Programs								
Poor life before	1.48	1.87	1.88	1.82	1.43	1.87	1.61	1.85
Good life before	0.88	1.25	1.32	1.54	1.52	1.73	1.21	1.52
Total	1.02	1.44	1.49	1.65	1.49	1.77	1.33	1.63
Mix with other inmates								
Poor life before	4.17	1.67	4.28	1.82	4.49	1.29	4.33	1.60
Good life before	4.27	1.57	4.37	1.62	4.20	1.48	4.29	1.56
Total	4.25	1.59	4.34	1.68	4.30	1.42	4.30	1.57
Mix with corrections officers								
Poor life before	2.08	1.54	2.01	1.31	2.08	1.21	2.05	1.34
Good life before	1.93	1.14	1.98	1.19	2.37	1.46	2.07	1.27
Total	1.97	1.24	1.99	1.23	2.67	1.38	2.07	1.29
Contact family								
Poor life before	3.94	2.19	4.52	1.84	5.18	2.04	4.60	2.06
Good life before	5.48	1.99	5.24	1.88	5.12	2.13	5.30	1.99
Total	5.12	2.14	5.02	1.89	5.14	2.09	5.09	2.04
Miss freedom								
Poor life before	7.61	2.06	7.72	1.61	7.77	1.66	7.71	1.75
Good life before	7.90	1.71	7.98	1.51	8.22	1.49	8.02	1.59
Total	7.84	1.79	7.90	1.54	8.06	1.57	7.93	1.64
Need control								
Poor life before	6.64	2.41	6.00	2.69	6.67	2.61	6.41	2.60
Good life before	6.41	2.61	6.35	2.68	7.01	2.55	6.56	2.63
Total	6.46	2.57	6.24	2.68	6.89	2.57	6.51	2.62
Miss sex								
Poor life before	7.50	2.10	7.81	1.90	7.97	1.34	7.79	1.78
Good life before	7.35	1.85	7.89	1.46	7.77	1.69	7.66	1.69
Total	7.39	1.91	7.87	1.60	7.84	1.58	7.70	1.72
Miss family								
Poor life before	8.17	1.53	8.08	1.79	8.24	1.34	8.16	1.56
Good life before	8.21	1.60	8.33	1.25	8.38	1.34	8.30	1.41
Total	8.20	1.58	8.25	1.44	8.34	1.34	8.26	1.46
Attacked/beaten								
Poor life before	2.36	1.99	2.96	2.52	2.85	2.06	2.76	2.23
Good life before	2.61	2.11	2.79	2.19	2.80	2.37	2.72	2.21
Total	2.55	2.08	2.84	2.29	2.82	2.26	2.74	2.21
Happiness								
Poor life before	–0.38	2.76	–0.35	2.32	–0.67	2.62	–0.47	2.54
Good life before	–1.12	2.42	–1.08	2.39	–0.90	2.63	–1.04	2.46
Total	–0.94	2.52	–0.85	2.39	–0.82	2.62	–0.87	2.50
Hopelessness								
Poor life before	–0.88	2.76	–1.53	2.36	–1.57	2.35	–1.36	2.48
Good life before	–1.02	2.55	–1.01	2.46	–1.68	2.38	–1.20	2.48
Total	–0.99	2.60	–1.18	2.44	–1.64	2.36	–1.25	2.48
Prison misconduct								
Poor life before	1.92	1.42	2.36	1.65	3.38	1.78	2.61	1.74
Good life before	1.55	0.92	2.00	1.53	2.52	1.69	1.98	1.44
Total	1.64	1.06	2.11	1.57	2.82	1.77	2.16	1.56

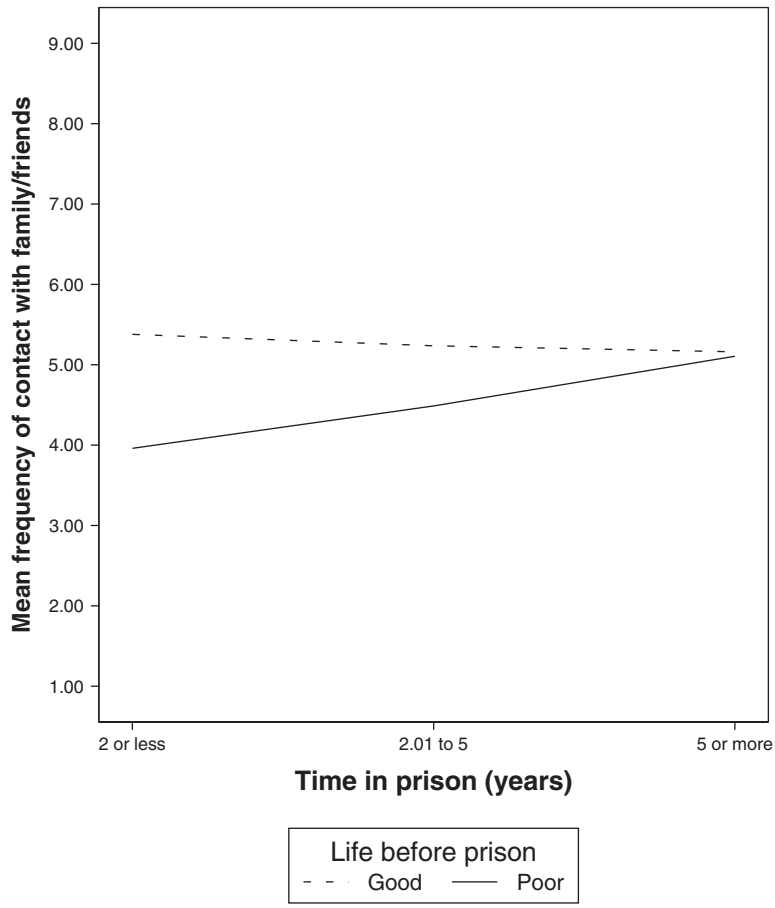

Figure 1: Interaction Effect of Time Spent in Prison by Quality of Life Before Prison on Frequency of Contact With Family and Friends From Outside

Thoughts. The correlations among prisoners' ratings of the frequency of their thoughts about missing their freedom, needing control over their life, missing sex, missing their family and friends, and being attacked or beaten ranged from $r = .10$ to .51. The covariate prison security level (but not sentence length) had a significant effect on the thoughts variable ($p < .001$), and after controlling for this, the multivariate test showed a marginally significant effect of time spent in prison on the thoughts variable, $F(10, 1278) = 1.67$, $p = .082$, partial $\eta^2 = .01$. There was no significant main effect of quality of life before prison or interaction effect of time spent in prison by quality of life before prison ($ps > .05$). Consistent with the indigenous approach, univariate F tests indicated that, after controlling for sentence length and prison security level, time spent in prison had a significant effect on the frequency of prisoners' thoughts about needing control over their life, $F(2, 642) = 3.35$, $p = .036$, partial $\eta^2 = .01$. Pairwise comparisons suggested that prisoners who had spent more than 5 years in prison reported thinking about needing control over their lives more often than prisoners who had been in prison from 2.01 to 5 years (see Table 2).

Emotions. The correlation between feelings of happiness and hopelessness was $r = -.19$. There was no significant effect of the two covariates sentence length and prison security level on the emotions variable (ps > .05). The multivariate test showed significant main effects of time spent in prison and quality of life before prison on the emotions variable, $F(4, 1296) = 2.66$, $p = .031$, partial $\eta^2 = .01$ and $F(2, 647) = 3.08$, $p = .047$, partial $\eta^2 = .01$, respectively. The interaction effect was nonsignificant ($p > .05$). Consistent with the indigenous approach, the univariate F tests revealed that, after controlling for sentence length and prison security level, time spent in prison had a significant effect on feelings of hopelessness, $F(2, 648) = 5.23$, $p = .006$, partial $\eta^2 = .02$. By contrast, consistent with the importation approach, quality of life before prison had a significant effect on feelings of happiness, $F(1, 648) = 5.99$, $p = .015$, partial $\eta^2 = .01$. Pairwise comparisons suggested that prisoners who had spent more than 5 years in prison reported greater feelings of hopelessness than before compared to prisoners who had spent 2 years or less in prison (see Table 2). Furthermore, prisoners with a poor quality of life before prison were happier than before compared to their counterparts with a good quality of life before prison (see Table 2).

Misconduct. ANCOVA was used to examine the effects of time spent in prison and quality of life before prison on prisoners' charges of disciplinary infractions in prison, controlling for sentence length and prison security level. After controlling for the significant effect of the prison-security-level covariate ($p < .05$; sentence length was nonsignificant, $p > .05$), time spent in prison and quality of life before prison both had a significant main effect on misconduct, $F(2, 687) = 21.30$, $p < .001$, partial $\eta^2 = .06$ and $F(1, 687) = 4.04$, $p = .045$, partial $\eta^2 = .01$, respectively. The interaction effect of time spent in prison by quality of life before prison was nonsignificant ($p > .05$), thus lending support to the independent effects of both the indigenous and importation approaches on adaptation to imprisonment. Pairwise comparisons indicated a positive relationship between time spent in prison and the frequency of disciplinary infractions in prison (see Table 2). Furthermore, prisoners with a poor quality of life before prison had a greater number of infractions in prison than prisoners with a good quality of life before prison (see Table 2).

Effects of Covariates

Sentence length. Sentence length was not a significant covariate in any of the analyses (ps > .05).

Prison security level. Prison security level was a significant covariate in the MANCOVA on the thoughts variable, $F(5, 638) = 8.87$, $p < .001$, partial $\eta^2 = .07$. The associated univariate F tests revealed that prison security level had a significant effect on the frequency of prisoners' thoughts of missing their freedom, $F(1, 642) = 5.31$, $p = .021$, partial $\eta^2 = .01$; missing their family and friends, $F(1, 642) = 16.72$, $p < .001$, partial $\eta^2 = .03$; and being attacked or beaten, $F(1, 642) = 25.80$, $p < .001$, partial $\eta^2 = .04$. In particular, the frequency of prisoners' thoughts about missing their freedom and family and friends was inversely related to prison security level. By contrast, the frequency of prisoners' thoughts about being attacked or beaten was positively associated with prison security level. Prison security level was also a significant covariate in the ANCOVA on misconduct, $F(1, 687) = 82.92$, $p < .001$, partial $\eta^2 = .11$. Here, prison security level was positively related to the number of disciplinary infractions in prison.

DISCUSSION

EXPERIENCES OF IMPRISONMENT

On average, the prisoners in our sample had spent 4.39 years in prison for the current sentence, which was 9.15 years on average. They reported participating in an average of 2.75 regime activities (out of 4) and only 1.33 programs (out of 8). Prisoners claimed that they had some contact with other inmates but less contact with corrections officers. They also said that their family and friends from the outside contacted them only occasionally. Prisoners stated that they always thought about missing their family and friends, they often thought of missing their freedom, needing control over their lives, and missing sex; but they rarely thought about being attacked or beaten. Prisoners reported feeling about as happy as before, and less hopeless than before, entering prison. Finally, prisoners stated that they had been charged with, on average, 2.16 disciplinary infractions in prison.

EXPLAINING ADAPTATION TO IMPRISONMENT

Our findings highlight the importance of both the indigenous (or deprivation) and importation approaches to explaining these specific adjustment patterns in prison. After controlling for sentence length and prison security level, there were direct effects of time spent in prison for the current sentence on measures of prisoners' participation in the regime (i.e., number of programs attended), their thoughts (i.e., needing control over their lives), their emotions (i.e., feelings of hopelessness), and their charges of misconduct in prison. Although we found no direct effect of quality of life before prison on measures of prisoners' thoughts, we did find direct effects of quality of life before prison on measures of prisoners' participation in the regime (i.e., number of programs attended), their emotions (i.e., feelings of happiness), and their charges of misconduct in prison. Finally, there was an interaction effect of quality of life before prison and time spent in prison on prisoners' contact with others (i.e., their family and friends from the outside). These findings are compatible with earlier studies reporting that various measures of the indigenous and importation approaches were independent predictors of adaptations (e.g., Camp et al., 2003; Cao et al., 1997; Jiang & Fisher-Giorlando, 2002) and research providing less support for their interaction effect (Wright, 1991).

Adaptations may be viewed as either positive or negative. Consistent with some previous research that has reported patterns of positive adjustment (e.g., Adams et al., 1994; Bonta & Gendreau, 1990; Zamble, 1992; Zamble & Porporino, 1988), we found that although the level of participation in programs was fairly low overall, prisoners participated in more programs as they spent more time in prison. Furthermore, prisoners with a poor quality of life before prison participated in more programs than those with a good quality of life before prison. For some prisoners, their official sentence plan may have dictated their level of participation in programs. For others, level of participation in programs may have been a result of either their own motivation to improve themselves or simply to alleviate the problem of boredom. Own motivation might particularly characterize those with a poor quality of life before prison who may have more skills to attain (e.g., thinking skills) and/or problems to resolve (e.g., drug addiction). Prisoners who "use" time and those who "fill in" time have different underlying adjustment patterns, although their observable behavior is the same.

This distinction is rarely made in the literature, but it may have different effects on post-release success and needs to be further explored.

We also found evidence for some negative effects of time spent in prison and quality of life before prison on adaptations to imprisonment. First, prisoners with a poor quality of life before prison were charged with more disciplinary infractions in prison. Second, prisoners who had spent more time in prison felt more hopeless and were more frequently charged with infractions in prison.

Although some of these findings contradict some previous studies (e.g., Flanagan, 1980b; MacKenzie & Goodstein, 1985; Zamble, 1992), they are compatible with other research (e.g., Flanagan, 1980a; Sappington, 1996). The similarities and differences among research findings may be partly explained by how variables are defined and measured (e.g., Zamble's sample had served more time in prison than our sample) as well as the cultures and penal systems studied (e.g., past research has been conducted primarily in the United States, Canada, and England, which differ not only in terms of the demographics of prison populations but also in terms of prison policies). A meta-analytic review could be useful in determining the impact of the methodological differences among studies in such an area where findings are mixed.

Other adaptations cannot be as easily classified as positive or negative. For instance, prisoners with a poor quality of life before prison felt happier than before, and prisoners who had spent more time in prison thought more frequently about needing control over their lives. It appears that the specific aims of imprisonment (e.g., rehabilitation or retribution) that are being aspired to will influence how adjustment patterns are construed. This raises the importance of different stakeholders agreeing on the functions of imprisonment. It also highlights the need to understand the extent to which positive or negative adjustment patterns are a good or bad thing for managing prison populations and for prisoners' postrelease success. For example, it is conceivable that a prisoner who is motivated to participate in regime activities may find it difficult to adjust to life on release if he finds himself unemployed.

There was limited support for the idea that adaptations to imprisonment may be explained by the interaction of indigenous and imported factors. The interaction effect was only significant for prisoners' contact with their family and friends. Prisoners with a good quality of life before prison had more contact with their family and friends from the outside than prisoners with a poor quality of life before prison if they had spent 2 years or less in prison. However, there was little difference between the two groups of prisoners as they spent more time in prison. Indeed, Hairston (1991) pointed out that prisoners progressively find it difficult to maintain family ties as they spend more time in prison.

LIMITATIONS AND FUTURE DIRECTIONS

Our study of adaptations to imprisonment employed a cross-sectional design. Although such designs can demonstrate differences, they cannot reveal change over time. Modes of adaptation are dynamic, and an individual will show different degrees and types of adaptation at different times or in different situations. Ideally, adaptations should be studied longitudinally, but this can be difficult in practice.

Our findings are pertinent to the incarceration experiences of adult males in the U.S. federal prison system and are not necessarily generalizable to other prison populations or penal systems. For example, male federal prisoners differ from their counterparts in state prisons

on certain preprison characteristics, such as marital status, education, offense, and criminal history (Bureau of Justice Statistics, 2000). However, they are also similar to their state counterparts in terms of age, race, and drug use. Furthermore, others have recently investigated the validity of indigenous and importation factors in juveniles (Gover, MacKenzie, & Armstrong, 2000) and female prisoners (Warren, Hurt, Loper, & Chauhan, 2004), and consistent with our findings, these studies provide evidence for the explanatory power of both the importation and indigenous approaches.

Overall, the effects we detected of time spent in prison and quality of life before prison on responses to imprisonment were small. Furthermore, a considerable proportion of the variation in adaptations was unaccounted for by the indigenous and imported factors that we have studied along with others. The large sample studied enabled detection of these small but statistically significant and theoretically important effects. Future research also needs to ensure that there is sufficient statistical power to detect such small effects. In addition, there may be other measures of these two approaches that could be usefully employed. For example, research has shown that age, which is a measure of the importation approach, was associated with prisoners' feelings of depression (Sappington, 1996), their desire to work in prison (Batchelder & Pippert, 2002), and their disciplinary infractions in prison (MacKenzie, 1987). The usefulness of such static factors in increasing a model's explanatory power could be further explored.

In addition, traditional theories of imprisonment may be incomplete. First, as Farrington (1992) has pointed out, prisons are not-so-total institutions. The impact of quality of life before prison and deprivation in prison on adjustment to imprisonment may be influenced by contact with the outside world during imprisonment. Future research could examine the quality and quantity of contacts with the outside world to discover how they affect adaptations relative to, and in interaction with, indigenous and imported factors. Second, it has been suggested that the effects of the indigenous and importation approaches may in fact be influenced by prison management strategies (e.g., DiIulio, 1987; Huebner, 2003). This is known as the "administrative-control" model and has mostly been used to study prison violence, riots, and misconducts. Future research could examine how other measures of adjustment, such as those studied here, reflect management strategies.

Imprisonment is a popular response to the problem of crime. With more than 2 million people detained in some form of custody, the United States has the highest per-capita prison population in the world (approximately 701 per 100,000 of the national population; Walmsley, 2003). The aim is to incapacitate offenders, to administer retribution, and to deter and rehabilitate them. However, imprisonment is associated with an increase in recidivism (Smith, Goggin, & Gendreau, 2002). Research on prisoners' adaptations to imprisonment may bring us one step closer to explaining and potentially controlling the (in)efficacy of prison. For instance, identifying the indigenous and imported factors that influence a prisoner's participation in the regime, his contact with others, his thoughts and feelings, and disciplinary infractions in prison may help prison managers to reconfigure experiences of confinement so that prisoners are more likely to reintegrate successfully and less likely to reoffend on release, as adaptations may significantly impact these outcomes.

NOTE

1. Alternatively, we could have computed 13 multiple linear regression models to predict each of the dependent variables, but this would inflate our chances of finding statistically significant results.

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