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**Document Title:           Baseline Psychopathology in a Women's Prison:  
Its Impact on Institutional Adjustment and Risk  
for Violence**

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**Document No.:           198621**

**Date Received:           January 2003**

**Award Number:           98-CE-VX-0027**

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**BASELINE PSYCHPATHOLOGY IN A WOMEN'S PRISON: ITS IMPACT ON  
INSTITUTIONAL ADJUSTMENT AND RISK FOR VIOLENCE**

**NATIONAL INSTITUTE OF JUSTICE  
CONTRACT AWARD #1998-CE-VX-0027**

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**July 15<sup>th</sup>, 2001**

**FINAL REPORT**

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*8/25/02*  
*PR 10/24/01*

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## EXECUTIVE SUMMARY

As chronicled by Megargee (1997), over the past twenty years, the number of individuals incarcerated in state and federal prisons has increased 446%. This increase has been accompanied by a growing recognition that a substantial proportion of these individuals suffer from significant degrees of mental illness or impairment. Reports such as *Criminalizing the Seriously Mentally Ill: The Abuse of Jails as Mental Hospitals* (Torrey et al., 1992), *Double Jeopardy: Persons with Mental Illness in the Criminal Justice System* (U.S. Department of Health and Human Services, 1995), and *The Mentally Ill in Jail: Planning for Essential Services* (Steadman, McCarty and Morrissey, 1989) have begun to make apparent the transfer of mentally ill individuals from state psychiatric institutions to jails and prisons. According to Torrey (1995), the prevalence of serious mental illness in correctional systems is 6-15%, with there being twice as many individuals with serious mental illness in jail and prison than in state psychiatric hospitals.

The preponderance of this research has been on seriously mentally ill males incarcerated either in local jails or state prisons. A similar review of women inmates has, until recently, been deemed unnecessary due to the smaller proportion of women in the nation's prisons. Emerging statistics have, however, demonstrated a radical increase in the number of women being incarcerated. For example, Teplin, Abram, and McClelland (1996) report that from 1983-1994, the number of incarcerated males doubled while the number of incarcerated females tripled. Recent epidemiological surveys of women in prison indicate that, similar to their male counterparts, incarcerated women have generally higher rates of mental illness and greater mental health needs

than community samples. In particular, incarcerated women have been found to have higher rates of psychosis, severe affective disorder, post-traumatic stress disorder, substance abuse and dependence, and cognitive impairment (Teplin, Abram, & McClelland, 1997; Swanson, Morrissey, Goldstrom, Rudolph, & Manderscheid, 1993).

The past decade has also been characterized by a growing awareness of the high rates of victimization reported by incarcerated women (Brown et al., 1999). Recognition of the high rates of childhood abuse reported by these women has focused interest on the relationship between these early and sustained forms of trauma and the high degree of evident psychological distress in adulthood. Although different research methodologies have resulted in widely varying estimates of prior victimization, there is general agreement that female prisoners have endured physical and sexual abuse well beyond that of the general population (American Correctional Association, 1990; Bloom, Chesney, & Owen, 1994; Fletcher, Rolison, & Moon, 1993; Sargent, Marcus-Mendoza, & Chong, 1993; Snell & Morton, 1994).

The increasing rates of serious mental illness in jails and prisons have deservedly been the focus of mental health studies because of the pressing need to provide immediate, sometimes inpatient care for affected inmates. At the same time, these studies also make clear that the vast majority of inmates who contribute to the high rates of psychopathology in general will not receive either 24-hour care or residential treatment while incarcerated. For example, in a national survey of service provision in prisons, 25 per 1000 inmates received 24-hour or residential care while a full 10% sought counseling or therapy (Morrissey, Swanson, Goldstrom, Manderscheid, 1993).

Preliminary findings indicate that for this larger group, the primary diagnoses are personality disorders (e.g., Morrissey et al., 1993; Edwards, Morgan and Faulkner, 1994). In particular, the DSM-IV Cluster B personality disorders (antisocial, borderline, histrionic, narcissistic) and the related construct of psychopathy were heavily implicated in the criminal behavior, both violent and nonviolent, that characterize the behavior of these women before, during, and after their incarceration.

The present study contributes to this growing interest and concern by focusing on the larger spectrum of psychopathology that characterizes the general nonhospitalized population in a women's prison. Specifically, the study is guided by three primary goals:

*Goal 1: To explore the psychiatric symptoms, childhood and adult victimization, and personality disorders that characterize a female prison population.*

*Goal 2: To explore the impact of these experiences and conditions on institutional adjustment and to validate the Prison Adjustment Inventory (PAQ), a measure developed for use with men, on a female sample.*

*Goal 3: To explore the relationship of these psychiatric conditions and past experiences to the violence perpetrated by female inmates while in the prison and in the community.*

To accomplish these goals, data were collected from two cohorts of women over a three-year period. The first phase of data collection involved the screening of 802 women from the general population of a maximum security prison using a variety of self-report measures including the Brief Symptom Inventory (BSI), SCID II Personality Screening Questionnaire (SCID II PQ), Prison Adjustment Questionnaire (PAQ), Barratt Impulsivity Scale (BIS), Violence and Aggression During Incarceration Questionnaire (PVI), Parenting Stress and Attachment Questionnaire, and a demographic summary based upon self-report and institutional file review. The second phase of data collection involved diagnostic interviews with a subsample of 261 inmates using the SCID II Personality Clinical Interview and the Diagnostic Interview Schedule (DIS) and completion of the Psychopathy Checklist-Revised (PCL-R) with 120 of the clinical subsample. Selected results of the study are summarized below.

*Goal 1: To explore the psychiatric symptoms, childhood and adult victimization, and personality disorders that characterize a female prison population.*

Table 1 summarizes the means and T Scores for the 10 psychopathology scales on the Brief Symptom Inventory (BSI) for the prison sample as well as the T Scores for the female nonpatient, outpatient, and inpatient standardization samples.

Table 1

Prison Sample and Inpatient, Outpatient and Nonpatient Standardization Samples for the Brief Symptom Inventory (Axis I Symptoms)

Scale	Prison	Standardization Samples		
	(n=798)		Outpatient (n=577)	Inpatient (n=265)
	Mean (SD)	T Score	T Score	T Score
Somatization	0.84 (0.85)	62	63	63
Obsessive-Compulsive	1.36 (1.06)	65	66	65
Interpersonal-Sensitivity	1.31 (1.10)	65	67	67
Depression	1.40 (1.01)	66	69	68
Anxiety	1.14 (1.00)	63	69	67
Hostility	1.07 (1.00)	66	67	63
Phobic Anxiety	0.60 (0.86)	63	65	66
Paranoid Ideation	1.59 (0.98)	70	65	65
Psychoticism	1.31 (1.00)	72	72	71
Global Severity Index	1.25 (0.84)	69	71	69

Note. T Scores based on Adult Female Nonpatient norm ( $M = 50$ ,  $sd = 10$ )

As summarized, the women inmates reported high degrees of psychological distress on all 10 scales and were significantly above the nonclinical sample, represented by a T score of 50. As illustrated, their degree of reported distress was similar in many respects to that reported by two large inpatient and outpatient female samples. The prison sample was one-half standard deviation above both patient standardization samples on Paranoid Ideation. Further analyses indicated that

younger women (under the age of 32) reported higher scores on Hostility, Interpersonal Sensitivity, Paranoid Ideation, Psychoticism, and Global Severity Index. The older women reported higher scores on Somatization. Consistent with past literature, women of ethnic minorities also reported less distress across scales than Caucasian women. This included lower mean scores on Anxiety, Depression, Interpersonal Sensitivity, Obsessive-Compulsive, Psychoticism, Somatization, and Global Severity. Education differentiated the inmates on seven of the BSI scales. Those who were more educated had lower mean scores on Hostility, Interpersonal Sensitivity, Obsessive-Compulsive, Paranoid Ideation, Phobic Anxiety, Psychoticism, and Global Severity.

Table 2 summarized self-reported victimization both as children and during the six months preceding incarceration. Fifty-five percent ( $n = 431$ ) of the women reported having been the victim of sexual abuse (rape, sexual assault, or incest) before age 18, while 39% ( $n = 303$ ) reported experiencing physical assault by either an adult or another child before age 18. The rates of physical and sexual abuse in the six months prior to incarceration were more modest. As summarized, 12% reported sexual assault and 19% reported other physical assault. As with the scores on the BSI, age and minority status were both found to be significantly correlated ( $p < .001$ ) with sexual and physical victimization before age 18. Both were negative correlations, indicating that the younger, nonminority women reported higher levels of victimization.

Table 2

Self-reported rates of victimization in childhood and before incarceration

	Frequency	Percent
Victimization before age 18		
Sexual		
Yes	431	55
No	346*	45
Physical		
Yes	305	39
No	472	61
Victimization 6 months before entering prison		
Sexual		
Yes	90	12
No	687	88
Physical		
Yes	149	19
No	628	81

\* Variation in total n caused by missing data

As summarized in Table 3, a large proportion of the sample endorsed a large number of criteria and screened positively for the presence of an array of the DSM-IV Axis II Personality Disorder. Over 50% screened positively for Paranoid, Borderline, Narcissistic, and Obsessive-Compulsive Personality Disorders. As the SCID II Screen is designed to screen accurately for the absence rather than the presence of personality disorders (in order to delimit the diagnostic categories that

are pursued upon interview), we assumed that these scores were at best proximate measures of personality disturbances.

Table 3

SCID II Personality Questionnaire: Mean number of criteria endorsed and frequency endorsing number required for diagnosis

Personality Disorder	Mean # of Criteria Endorsed (SD)	Frequency Endorsing # Required for Diagnosis (%)
Paranoid	4.04 (2.08)	491 (61)
Schizotypal*	3.55 (1.56)	250 (31)
Schizoid	3.21 (1.59)	332 (42)
Borderline	5.01 (2.72)	461 (58)
Histrionic**	1.97 (1.62)	73 (9)
Narcissistic	4.96 (2.39)	470 (59)
History of Conduct Disorder	3.36 (3.60)	375 (47)
Avoidant	2.91 (1.96)	286 (36)
Dependent	2.20 (1.92)	114 (14)
Obsessive-Compulsive	3.92 (1.67)	478 (60)

\*Three Criteria Not Assessed by Screen.

\*\* Two Criteria Not Assessed by Screen

Chi Square Analyses were conducted to compare group frequencies in younger (age 32 and under) and older (over age 32) inmates and minority and nonminority inmates on endorsing the number of criteria required for diagnosis of a personality disorder. Significantly more younger

women endorsed the required number of criteria for Paranoid PD, Schizotypal PD, Borderline PD, Histrionic PD, Narcissistic PD, and Conduct Disorder/Antisocial Personality Disorder. More minority than nonminority women endorsed the required number of criteria for Schizoid, Borderline PD, Narcissistic PD, Avoidant PD, Dependent PD, and Obsessive-Compulsive Personality Disorder.

These results suggest racially divergent trajectories concerning the factors that influence the inmates' movement toward and response to incarceration in a maximum security prison. In our study, the nonminority women were characterized by significantly higher rates of Axis I psychopathology as measured by the BSI and higher rates of sexual and physical victimization as children. In contrast, minority women reported higher levels of endorsement of the Axis II or personality symptoms. These differences could reflect processing biases within the criminal justice system, subjective differences in the way that internal distress is experienced and described by minority and nonminority women, and/or differences in self-report on research instruments according to ethnic groupings. It is possible, as suggested by Teplin et al. (1996) and Jordan et al. (1996), that only the most impaired and victimized nonminority women reach prison while minority women are prosecuted and sentenced according to a more harsh but unspoken standard. Alternatively, cultural differences may cause white women to experience and describe their psychological distress in terms of symptomatic experiences and early victimization, while minority women express the same type of internal distress through the more outwardly oriented symptoms of personality disturbance and violence toward others.

*Goal 2: To explore the impact of these experiences and conditions on institutional adjustment and to validate the Prison Adjustment Inventory (PAQ), a measure developed for use with men, on a female sample.*

The Prison Adjustment Questionnaire (PAQ; Wright, 1985) was used to measure adjustment among the women in the current study. The PAQ was initially developed to explore differences in prison adjustment between black and white male inmates. Assuming differences in prior life experience and biases in official reporting, the PAQ was designed to assess comparative adjustment of prisoners within prison in contrast to the community, while also assessing discomfort with prison across several dimensions.

The PAQ assesses perceptions of comfort around inmates, comfort with staff, feelings of anger, frequency of illness, trouble sleeping, fears of being attacked, physical fights, heated arguments with inmates, heated arguments with staff and frequency of injury and exploitation. The measure was validated on a male sample by examining the relationship of factor-derived scales on the PAQ with the number of institutional infractions, suicide attempts, and sick calls inmates had made in the past year. The factor analysis of the 20 PAQ items in Wright's (1985) sample suggested a three-factor solution: (1) the Internal Scale, which focused on subjective forms of distress such as being uncomfortable around people, getting angry and having trouble sleeping; (2) the External Scale, which involved behaviors that reflected a tendency toward fighting and arguing; and (3) the Physical Scale, which included aspects of physical discomfort and fear in which the inmate experienced problems with sickness, injury, and being taken advantage of by

other inmates. Internal consistency coefficients ranged from .50 to .74 while correlations between scales were .30 to .40.

With the female sample, a different coding system and analyses based on a two-factor rather than a three-factor model of adjustment were used. For most items, a majority of women reported that their environment had not worsened since incarceration. Therefore, the Wright (1985) scoring system that tabulated only problems that were worse in prison was replaced with a scoring system that tabulated all problems reported by the women regardless of their comparative significance. An alternative factor analysis conducted on this scoring system also suggested a two-factor rather than three-factor model of the construct. All variables had sufficient loadings, and this solution suggests a *Conflict Factor*, which captures feeling angry, arguing, fighting, and being injured; and a *Distress Factor*, which captures being uncomfortable around people, sleep problems, being sick, and fear of being attacked or exploited.

To assess concurrent validity of the Prison Adjustment Questionnaire (PAQ), scores on the alternative two-factor derived scales observed in the present study, Distress and Conflict, were evaluated for relationships with measures of psychological symptomatology (Brief Symptom Inventory Depression, Anxiety, Somatization, and Global Severity Index scales), self-report of perpetration of and victimization by aggressive behaviors during incarceration (physical assaults, threats, and sexual assault from the Prison Violence Inventory), and average counts per month of violent, nonviolent socially proscribed, and prison-rule based institutional misconduct.

Table 4

Factor Loadings and Internal Reliability for Warren et al. Female-Derived Two-Factor Solution

Problem	Distress	Conflict
Uncomfortable Around Inmates	.68	-.06
Uncomfortable Around Staff	.41	.21
Problems Sleeping	.56	-.05
Being Sick	.34	.09
Fear of Being Attacked	.58	-.04
Fear of Being Taken Advantage Of	.50	.06
Feeling Angry	.33	.46
Heated Arguments with Inmates	.06	.66
Heated Arguments with Guards	-.11	.78
Fights	-.03	.54
Being Injured	.25	.26
Coefficient Alpha	.69	.70

The prison adjustment scale scores demonstrated consistent relationships with the validating measures. Psychological symptomatology as measured by the Brief Symptom Inventory correlated significantly with both scales but demonstrated a trend in which the correlation coefficients were consistently higher for the *Distress Factor*, while perpetration of violence, counts of institutional misconduct, and security classification were more strongly related to the *Conflict Factor*.

A series of standard multiple regressions were also performed to assess which factors best

predicted adjustment to the prison environment in the current population using each of the adjustment scale scores, *Distress* and *Conflict*, as dependent variables. Due to the exploratory nature of the analyses, demographic and crime history variables that showed a significant correlation with the *Distress* or *Conflict* scale were entered into the two analyses. Two independent variables, minority status and prior incarceration, contributed significantly to prediction of scores on the *Distress* subscale. Nonminority women and women who had experienced prior incarcerations were found to score higher on the *Distress* scale. Four variables contributed significantly to prediction on the *Conflict* subscale. Younger women scored higher on the *Conflict* scales as did women who had never been married. Higher scores were also predicted for women who had been convicted of a violent crime, and who had served more time in prison.

The current study suggests that prison adjustment can be validly measured in a female population using the Prison Adjustment Questionnaire (PAQ). The PAQ correlated in a consistent and theoretically interpretable manner with validated measures of psychiatric distress, self-report measures of violence perpetration and violence victimization as well as institutional counts of misconduct and security classification. The consistency of validation across psychological measures, self-report inventories, and institutional assessments suggest a consistent and multifaceted measurement of the behaviors and experiences associated with adjustment to a prison environment.

The dimensional structure of the measure when used with a female population is

both similar to and different from that observed among male inmates. As summarized above, a two-factor solution fits the current data better than the three-factor solution reported by Wright (1985) when validating the measure with male inmates. Interestingly, the two-factor distinction labeled Distress and Conflict in the current study reflects the two theoretical constructs that Wright (1985) originally sought to measure when developing the PAQ: emotional distress and physical aggression.

In this sample, the majority of the women reported that they had worse problems with feeling angry, having heated arguments, getting involved in fights, being injured, getting sick, and fearing an attack when they were living in the community than when they were living in prison. This finding has both sociological and methodological significance. Regarding the former, it is important for professional audiences to understand that many female inmates feel safer, calmer and physically more secure in prison than they do with their lives in the outside world. This finding apparently quantifies the instability and chaos of the inmates' pre-incarceration lives rather than any degree of comfort afforded to them by the prison environment. Methodologically, this finding makes the scoring procedure used by Wright invalid with women inmates as it would inappropriately suppress and hide the problems with adjustment that our sample experiences in prison due to the unusually harsh nature of their lives prior to entry. Our approach separates the community comparison from the degree of difficulty experienced during incarceration and, therefore, allows for a less constrained analysis of the problems these women do nonetheless experience in prison.

*Goal 3: To explore the relationship of these psychiatric conditions and past experiences to the violence perpetrated by female inmates while in the prison and in the community.*

The clinical subsample was comprised of 261 inmates who had been previously screened during the larger data collection effort involving the 802 inmates. Women who agreed to participate in this phase of the study and those who did not were compared according to age, race, offense type, and length of sentence using data from institutional files. The research sample was slightly younger and had more counts of institutional misconduct but did not differ according to the variables of race, violent criminal offending, sentence, or security classification.

The SCID-II Screen provides a screening questionnaire with one question per DSM-IV personality diagnosis criterion, stated in lay terms to determine the areas of personality pathology most relevant to the individual assessment. In the current study, the scores on the SCID-II Screen and Brief Symptom Inventory (BSI) were used to screen nonpsychotic women into an experimental and/or control group. The experimental group was to include randomly chosen women who reported criteria sufficient on the SCID-II Screen to suggest a Cluster B personality disorder diagnosis: Antisocial, Borderline, Histrionic and Narcissistic. The control group was designed to contain at least 50 nonpsychotic women who did not meet criteria for a Cluster B diagnoses.

The most common diagnoses included Antisocial Personality Disorder (43%), Paranoid Personality Disorder (27%), and Borderline Personality Disorder (24%). The least common

diagnoses included Schizoid Personality Disorder (5%), Dependent Personality Disorder (4%), and Schizotypal Personality Disorder. Consistent with past research, the diagnoses tend to overlap, showing patterns of comorbidity across the personality disorders. Comorbidity rates above 40% were demonstrated between Paranoid (69%), Schizoid (54%), Schizotypal (56%) and Antisocial Personality Disorder as well as between Schizotypal (67%); Paranoid (41%), Antisocial (43%) and Borderline Personality Disorder. Schizoid and Obsessive-Compulsive Personality Disorders showed the least degree of comorbidity in the current sample. The average number of diagnosable personality disorders per inmate was 1.46 (SD = 1.47).

A series of multivariate analyses were run predicting the various violence and criminality measures from both the broad personality disorder clusters and individual diagnoses within Cluster B. The dichotomous measure of whether or not diagnostic criteria had been met was used as the independent variable in these analyses accompanied by age, race and time served when indicated. Logistic regression was used in predicting the categorical violence and criminality measures and multiple regression in predicting the continuous violence and criminality measures.

The Cluster B Personality Disorders, taken as a group, were not predictive of violent criminal behavior outside of the institution nor of violent institutional infractions as identified or recorded by prison officials. The combined Cluster B disorders were predictive only of self-reported violence within the institution.

Table 5

Logistic Regression Summary for Personality Disorder Clusters and Individual Cluster BDiagnoses Predicting Categorical Violence and Criminality Variables

Variable	B	SD	P	Odds Ratio
<i>Cluster A</i>				
Current Convictions of Violence Crime with Homicide	0.46	0.16	0.004	2.50
Current Convictions of Violent Crime without Homicide	0.46	0.15	0.003	2.49
Current Conviction for Prostitution	0.92	0.35	0.008	6.35
<i>Cluster B</i>				
Self-Report Institutional Violence/Categorical	0.59	0.17	0.001	3.26
<i>Narcissistic PD</i>				
Current Convictions of Violence Crime with Homicide	1.01	0.33	0.002	7.57
Current Convictions of Violent Crime without Homicide	0.80	0.26	0.002	4.92
<i>Antisocial PD</i>				
Self-Report Institutional Violence/Categorical	0.58	0.17	0.001	3.18
<i>Borderline PD</i>				
Self-Report Institutional Violence/Categorical	0.53	0.18	0.004	2.88
<i>Cluster C</i>				
Current Convictions of Drug Crime	-0.37	0.17	0.027	0.48
Current Convictions of Regulatory Crime	0.34	0.17	0.050	1.96

These results seem to suggest that women suffering from Antisocial Personality Disorder, the most common of the Cluster B diagnoses in the current sample, are diffuse and generic in their offending behavior and perpetrate a variety of crimes rather than focusing their illegal activities on specific crime categories. Conversely, the higher rate of self-reported violent behaviors within the institution by women meeting diagnostic criteria for Antisocial Personality Disorder appears

to be multi-determined and to include either a propensity for these women to be involved in interpersonally threatening behavior in such a way as to avoid official notice and sanction, or for women with Antisocial Personality Disorder to exaggerate and embellish their predatory and exploitative tendencies.

In marked contrast to this lack of a predictive relationship between general Cluster B personality pathology in general and violent crime, Narcissistic Personality Disorder predicted current incarceration for any violent crime including murder and any violent crime excluding murder with odds ratios of 7.57 and 4.92 respectively. Unlike the other Cluster B diagnoses, these results suggest a powerful relationship between this particular personality disorder and violent behavior among incarcerated women. Narcissistic Personality Disorder was diagnosed in 10% of the sample, with rates of comorbidity ranging from 4% (Dependent Personality Disorder) to 44% (Histrionic Personality Disorder). These results suggest that the entitlement, grandiosity, interpersonal exploitativeness, lack of empathy, and envy that characterizes this disorder may also be correlates of violent behavior among certain women.

Unexpectedly, a significant predictive relationship was found between Cluster A personality disorders and violent behavior. This relationship included both violent offenses including and not including homicide with odds ratios of 2.50 and 2.49. These results suggest that the suspicious attitudes, bizarre forms of thinking, and social isolation associated with the Cluster A personality disorders may be linked to the more extreme types of violence perpetrated by women. Recently, Monahan et al. (2001), using the MacArthur violence risk data, failed to confirm the earlier

robust relationship between threat-control-override delusions and violence, leading these researchers to speculate that it was a generally suspicious attitude to others rather than the delusional structure *per se* that increased the level of risk for violent behavior. The findings from the current study similarly suggest that suspiciousness and odd beliefs are highly relevant to risk assessment for violence among women, superseding the reckless and tumultuous behavior more commonly associated with personality disorders among female offenders.

The findings summarized above are significant to policy debates regarding the perpetration of violence and criminality by women as well as to the assessment and investigation of the structure of personality disorders within this particular population. They clearly highlight the elevated prevalence of personality disorders among the women incarcerated in this particular maximum security prison. Out of a combined sample of 261 women, 67% were found to meet criteria for at least one personality disorder; 51% for one of the four Cluster B diagnoses, and 16% for the Cluster A and C personality disorders, proportions that far exceed those found in community samples (Robbins, Monahan, & Silver, 2001). The symptoms of these chronic and persistent disorders, including tumultuous relationships, impulsivity, recklessness, susceptibility to substance use and abuse on the Cluster B continuum, as well as the suspiciousness, social awkwardness and overly dependent attitudes and behaviors that characterize the Cluster A and C continua, have all preceded incarceration and inevitably have contributed to the behavior or the series of behaviors that led to these legal outcomes or sanctions.

These findings suggest that the women who are currently incarcerated in prisons suffer from

more extensive and diverse types of psychopathology than is suggested by studies that focus only on the acute forms of mental illness. It also highlights the societal cost that accrues from our current impasse regarding effective ways of either minimizing the development of these less obvious forms of psychiatric impairment or treating them once they have crystallized into long-term forms of maladaptive functioning.

Taken as a whole, these data underscore the pervasive rates of psychiatric distress, victimization, and personality disorders that characterize a female prison population. The impact of these conditions and experiences are obvious both in terms of their personal costs as well as the cost that accrues to society. While it is impossible to separate cause from effect once the woman has reached the impasse of incarceration, it is clear that the majority of women have been experiencing victimizing and harsh life circumstances for many years, that the symptoms of their pervasive types of personality disorders have likely been apparent since adolescence, and that the same influences that cause their personal suffering also contribute in a powerful manner to the patterns of criminality and violence that plague our society. The finding that many of the women find their life adaptation easier in prison than in the community further underscores the progressive trajectories that contribute to this tragic and costly outcome.

## INTRODUCTION

As chronicled by Megargee (1997), over the past twenty years, the number of individuals incarcerated in state and federal prisons has increased 446%. This increase has been accompanied by a growing recognition that a substantial proportion of these individuals suffer from significant degrees of mental illness or impairment. Reports such as *Criminalizing the Seriously Mentally Ill: The Abuse of Jails as Mental Hospitals* (Torrey et al., 1992), *Double Jeopardy: Persons with Mental Illness in the Criminal Justice System* (U.S. Department of Health and Human Services, 1995), and *The Mentally Ill in Jail: Planning for Essential Services* (Steadman, McCarty and Morrissey, 1989) have begun to make apparent the transfer of mentally ill individuals from state psychiatric institutions to jails and prisons. According to Torrey (1995), the prevalence of serious mental illness in correctional systems is 6-15%, with there being twice as many individuals with serious mental illness in jail and prison than in state psychiatric hospitals.

The preponderance of this research has been on seriously mentally ill males incarcerated either in local jails or state prisons. A similar review of women inmates has, until recently, been deemed unnecessary due to the smaller proportion of women in the nation's prisons. Emerging statistics have, however, demonstrated a radical increase in the number of women being incarcerated. For example, Teplin, Abram, and McClelland (1996) report that from 1983-1994, the number of incarcerated males doubled while the number of incarcerated females tripled. Recent epidemiological surveys of women in prison indicate that, similar to their male counterparts, incarcerated women have generally higher rates of mental illness and greater mental health needs

than community samples. In particular, incarcerated women have been found to have higher rates of psychosis, severe affective disorder, post-traumatic stress disorder, substance abuse and dependence, and cognitive impairment (Teplin, Abram, & McClelland, 1997; Swanson, Morrissey, Goldstrom, Rudolph, & Manderscheid, 1993).

The past decade has also been characterized by a growing awareness of the high rates of victimization reported by incarcerated women (Brown et al., 1999). Recognition of the high rates of childhood abuse reported by these women has focused interest on the relationship between these early and sustained forms of trauma and the high degree of evident psychological distress in adulthood. Although different research methodologies have resulted in widely varying estimates of prior victimization, there is general agreement that female prisoners have endured physical and sexual abuse well beyond that of the general population (American Correctional Association, 1990; Bloom, Chesney, & Owen, 1994; Fletcher, Rolison, & Moon, 1993; Sargent, Marcus-Mendoza, & Chong, 1993; Snell & Morton, 1994).

The increasing rates of serious mental illness in jails and prisons have deservedly been the focus of mental health studies because of the pressing need to provide immediate, sometimes inpatient care for affected inmates. At the same time, these studies also make clear that the vast majority of inmates who contribute to the high rates of psychopathology in general will not receive either 24-hour care or residential treatment while incarcerated. For example, in a national survey of service provision in prisons, 25 per 1000 inmates received 24-hour or residential care while a full 10% sought counseling or therapy (Morrissey, Swanson, Goldstrom, Manderscheid, 1993).

Preliminary findings indicate that for this larger group, the primary diagnoses are personality disorders (e.g., Morrisey et al., 1993; Edwards, Morgan and Faulkner, 1994). In particular, the DSM-IV Cluster B personality disorders (antisocial, borderline, histrionic, narcissistic) and the related construct of psychopathy were heavily implicated in the criminal behavior, both violent and nonviolent, that characterize the behavior of these women before, during, and after their incarceration.

The present study contributes to this growing interest and concern by focusing on the larger spectrum of psychopathology that characterizes the general, nonhospitalized population in a women's prison. Specifically, the study is guided by three primary goals:

*Goal 1: To explore the psychiatric symptoms, childhood and adult victimization, and personality disorders that characterize a female prison population.*

*Goal 2: To explore the impact of these experiences and conditions on institutional adjustment and to validate the Prison Adjustment Inventory (PAQ), a measure developed for use with men, on a female sample.*

*Goal 3: To explore the relationship of these psychiatric conditions and past experiences to the violence perpetrated by female inmates while in the prison and in the community.*

*Goal 1: To explore the psychiatric symptoms, childhood and adult victimization, and personality*

*disorders that characterize a female prison population.*

### *Procedures and Instrument*

The first stage of data collection involved a prison-wide screening of 802 inmates. The women were approached in each of their units by one of the research staff accompanied by a correctional officer. They were told briefly about the purposes of the research and invited to accompany the researcher to the educational center within the prison to complete a number of paper and pencil instruments. They were informed that this first set of instruments would take approximately an hour to complete and that the instrument would be read to any one who preferred this mode of administration. The women were given soda and cookies during this administration and allowed to take back to their unit fluorescent pens that read "Fluvanna Correctional Center for Women/ University of Virginia, 2000-2001. Thank you ladies!"

The first battery of protocols included the following instruments:

- *Demographic Summary (both self-report and institutional file review):* Participants completed a one-page questionnaire in which they reported their age, race, number of times married, current marital status, number of children, last year of education completed, living arrangements before incarceration, and whether they had been incarcerated before.
- *Brief Symptom Inventory (BSI):* The Brief Symptom Inventory (Derogatis, 1993) (BSI) is

a 53-item measure of mental health symptom status at a particular point in time. It contains nine scales: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobia, paranoid ideation, and psychoticism. A continuous score, including all of the scales plus four general distress symptoms, results in a Global Severity Index.

- *SCID II Personality Screening Questionnaire (SCID II PQ)*: The SCID-II Screening Questionnaire is a 119-item instrument designed to screen for the presence of Axis Two psychopathology and to orient the interviewer to the sections of the SCID-II interview that require further exploration. It was used in the current study to screen women with indices of Cluster B psychopathology into the Stage Two of the study.
- *Prison Adjustment Questionnaire (PAQ)*: The Prison Adjustment Questionnaire (Wright, 1986) (PAQ) is a 20-item questionnaire specifically designed for use with incarcerated populations. It includes three general factors of institutional functioning: internal (capturing the inmate's coping ability), external (capturing problems with others), and physical (capturing the inmate's level of physical complaints). The PAQ also contains 10 additional questions which comprise a survey of the inmate's satisfaction with items such as food, exercise, and privacy.
- *Barratt Impulsivity Scale (BIS)*: The Barratt Impulsivity Scale (Barratt & Patton, 1991) (BIS) is a 30-item questionnaire assessing three aspects of impulsivity: Nonplanning (e.g., I say things without thinking), motor (I buy things on impulse), and cognitive (e.g., I have outside thoughts when thinking).
- *Violence and Aggression During Incarceration Questionnaire (PVI)*: The violence

questionnaire, designed for this study, consists of 22 questions assessing whether the participants, since being incarcerated, have been either the victim or perpetrator of threats, physical assaults, forced sexual activity, theft, false rumors or lies.

- *Victimization During Childhood and Before Incarceration Questionnaire (Vic-I)*: The victimization questionnaire, designed for this study, consists of 11 questions, assessing whether the participant was the victim of rape, sexual assault, incest, or nonsexual physical assault by an adult or another child before the age of 18 and whether the participant was the victim of rape, sexual assault, nonsexual physical assault, robbery, or theft during the six months before entering prison.
- *Parenting Stress and Attachment Questionnaire*: The Parenting Questionnaire was a 60-item instrument designed for use in the current study to ascertain the patterns of attachment demonstrated by the female inmates and the additional stress they experienced as a result of being parents while incarcerated.

### *Sample Characteristics*

The demographic and crime history characteristics of the prison wide sample are summarized in Tables 1, 2, and 3. The stage one sample represented approximately 70% of the women incarcerated over the two years of the study, and thus the sample was thought to be highly representative of the entire prison population.

An overview of these descriptive statistics indicate that:

- Approximately ½ of the sample was under the age of 30.
- The largest category was made up of African-American women (55%); Caucasian women constituted 39%, and other ethnicities constituted 7%.
- 49% of the women in the current sample had not completed high school; 1/4 had completed high school with some college course credit; and 5% had a college degree.
- The largest category of women were never married (46%); 18% were married, 18% were divorced, and the remainder were living in common-law relationships, were legally separated, or had been widowed.
- 78% of the incarcerated women had at least one child; 43% had one or two children, 33% had 3-5 children, and 3% of the women (n = 21) had 6 or more children.
- 67% of the women had experienced some period of incarceration prior to the current sentence.
- The range of sentences is one year to life without parole. 57% were serving sentences of 5 years or less; 18% were serving sentences of 5-10 years; 8% 11-15 years; 5% 15-20 years; and 12% had been sentenced to life in prison.
- The crime categories were defined to include violent (23%), potentially violent (10%), other crimes against person (3%), sex (2%), property (40%), drug (22%), and other (1%).
- There are three security levels at Fluvanna Correctional Center: 47% of the women were classified as high security; 21% as medium security; and 32% as low security.

Table 1 Sample Characteristics by Race

	Caucasian	African-American	Other
<b>Age</b>			
18-24	50 (17%)	56 (14%)	19 (37%)
25-32	81 (28%)	130 (33%)	14 (27%)
33-40	95 (33%)	127 (32%)	12 (23%)
41-50	53 (18%)	67 (17%)	5 (10%)
Over 50	11 (3%)	12 (3%)	2 (4%)
Total	290 (100%)	392(100%)	52 (100%)
<b>Education</b>			
8 <sup>th</sup> Grade	35 (12%)	45 (11%)	6 (12%)
9-11th Grade	80 (26%)	200 (47%)	13 (25%)
High School	84 (28%)	94 (22%)	11 (21%)
Some College	87 (29%)	70 (16%)	16 (31%)
College Grad	16 (5%)	16 (4%)	6 (12%)
Total	302 (100%)	425 (100%)	52 (100%)
<b>Marital Status</b>			
Single	91 (30%)	238 (57%)	24 (15%)
Married	67 (22%)	62 (15%)	12 (8%)
Common Law	11 (4%)	25 (6%)	3 (2%)
Separated	27 (9%)	38 (9%)	1 (1%)
Divorced	93 (31%)	36 (9%)	9 (6%)
Widowed	12 (4%)	21 (5%)	2 (1%)
Total	301 (100%)	420 (100%)	159 (100%)
<b>Number of Children</b>			
0	66 (22%)	82 (19%)	16 (31%)
1-2	147 (49%)	166 (39%)	22 (42%)
3-5	82 (27%)	164 (39%)	11 (21%)
6+	7 (2%)	11 (3%)	3 (6%)
Total	302 (100%)	423 (100%)	52 (100%)

Table 2 Demographic Characteristics by Category

	Frequency*	Percent
<b>Age</b>		
Under Age 32	352	47.6
Over Age 32	387	52.4
<b>Race/Ethnicity</b>		
Minority	486	61.4
Nonminority	306	38.6
<b>High School Education</b>		
Yes	402	51.2
No	384	48.8
<b>Ever Married**</b>		
Yes	443	55.4
No	357	44.6
<b>At Least One Child</b>		
Yes	634	79.3
No	166	20.7
<b>Length of Sentence</b>		
Under 5 Years	456	57.0
Over 5 Years	344	43.0
<b>Time Served</b>		
Under 1 year	117	16.7
Over 1 year	583	83.3
<b>Prior Incarceration</b>		
Yes	258	33.1
No	521	66.9
<b>Most Serious Offense</b>		
Violent	148	20.8
Potentially Violent	57	8.0
Sex Crimes	10	1.4
Other Crimes Against Persons	10	1.4
Drug	197	27.6
Property	278	39.0
Minor	7	1.0
Other	6	1.0

\* Total n varies because of missing data

\*\* Women who selected "Common Law Marriage" were included in having been married.

**Table 3 Crime Characteristics of Sample**

	Under Age 32	Over Age 32
<b>Prior Incarceration</b>		
Yes	76 (22%)	165 (44%)
No	270 (78%)	212 (56%)
Total	346 (100%)	377 (100%)
<b>Sentence</b>		
0-2 years	71 (23%)	76 (22%)
3-5 years	106 (35%)	125 (36%)
6-10 years	58 (19%)	61 (17%)
11-15 years	29 (10%)	25 (7%)
16-20 years	11 (4%)	18 (5%)
20 years to life	28 (9%)	47 (13%)
Total	303 (100%)	352 (100%)
<b>Type of Offense</b>		
Violent	69 (22%)	61 (17%)
Potentially Violent	29 (9%)	24 (7%)
Other Crimes Against Person	8 (3%)	1 (.2%)
Sex Crimes	5 (2%)	5 (1%)
Property	120 (39%)	143 (41%)
Drug	68 (22%)	108 (31%)
Minor	4 (1%)	7 (2%)
Other	4 (1%)	2 (1%)
Total	307 (100%)	351 (100%)
<b>Security Classification</b>		
Low	94 (32%)	157 (48%)
Medium	60 (21%)	85 (26%)
High	136 (47%)	86 (26%)

### *Literature Pertaining to Psychiatric Morbidity Among Female Prison Inmates*

Investigations of psychiatric morbidity among incarcerated females consistently find rates of impairment that are significantly higher than those found among community populations.

Bincree, Bloom, LeVerette and Williams (1994) studied 91 Oregon inmates and found that over half of the women had prior contact with the mental health system, 37% had previously taken psychiatric medication, and 15% were currently receiving psychotropic medication while incarcerated. Based on clinical interview, they found that 83% of the women met criteria for at least two clinical diagnoses, most frequently Substance Abuse Disorder, Major Depression, or Adjustment Disorder with Depressed Mood.

This pattern of long-standing psychiatric morbidity is reflected in the structurally comparable studies conducted by Teplin, Abram and McClelland (1996) and by Jordan, Schlenger, Fairbank, and Caddell (1996). Teplin et al., using the National Institute of Mental Health Diagnostic Interview Schedule (DIS), examined the psychiatric morbidity of 1,272 female jail detainees in Chicago, Illinois. This effort confirmed a higher prevalence of all disorders among the jail sample as compared to the Epidemiological Catchment Area community sample (Regier et al., 1984) with the exception of Schizophrenia and Panic Disorder. Within the jail sample, Teplin et al. found a lifetime prevalence of severe disorders (including Schizophrenia, Mania and Major Depression), 18.5%; Dysthymia, 9.6%; Substance Abuse/Dependence, 70.2%; Panic Disorder, 1.6%; Generalized Anxiety Disorder, 2.5%; and Post-traumatic Stress Disorder, 33.5%.

Jordan et al. determined a similarly high prevalence of all disorders among 805 female felons in North Carolina. These results were again significantly higher than the prevalence rates reported in the ECA community sample for the same region, with the exception of Anxiety Disorder. Using the Composite International Diagnostic Interview (CIDI), the authors found that two-thirds of the prison population met criteria for at least one of the disorders being assessed, including Major Depressive Episode, 13.0%; Dysthymia, 7.1%; Generalized Anxiety Disorder, 2.7%; Panic Disorder, 5.8%; Alcohol Abuse and Dependence, 38.6%; and Drug Abuse and Dependence, 44.2%.

Mohan, Scully, Collins, and Smith (1997) sought to determine the prevalence of psychiatric disorders in an Irish women's prison. They used the Schedule for Clinical Assessment in Neuropsychiatry (SCAN) with 45 of 80 consecutive admissions to Mountjoy Prison in Dublin and found that 82% of the sample met criteria for at least one psychiatric condition, most frequently Substance Dependence (58%), and Major Depression (11%). Citing similar work conducted in England and Wales by Maden, Swinton, and Gunn (1994), Hurley and Dunne (1991) and Herrman, McGorry, Mills, & Singh, B. (1991) in Australia, the authors reported comparably high rates of substance dependence among the female prisoners but contrasted these to an earlier study by Turner and Tofler (1986) in England and Wales which found only 14% of the prisoners to be drug dependent.

Several hypotheses have been offered to explain the high levels of psychiatric morbidity observed among incarcerated female populations. Severe forms of early abuse and neglect,

common to many incarcerated women, may lead to psychiatric disturbance (Widom, 2000) and/or reflect the familial or intergenerational transmission of psychological instability.

Alternately, racial disparity may contribute to differential handling of female felons by the criminal justice system. Teplin et al. (1996) highlight that high levels of psychiatric distress are reported and observed primarily among white inmates and, along with Jordan et al. (1996), suggest that a racially-motivated selection system may incarcerate only the most deviant and disturbed white women, while allowing African-American women to be imprisoned for less serious and frequent offenses. A third, closely related explanation, suggests that the increased emphasis on incarceration of drug offenders sweeps more impaired women into the criminal justice system where the underlying pathology rather than the substance abuse *per se* becomes apparent both to the women and to the treatment staff (Chesney-Lind, 1998).

In addition to forms of mental disorder that are associated with specific symptoms and discrete episodes of disturbance, such as Depression or Substance Abuse Disorder, incarcerated women frequently are diagnosed with varying forms of character pathology. This type of dysregulation, usually termed personality disorder, refers to stable, long-standing dysfunctional interpersonal behavior that results in impairment throughout most spheres of adult functioning. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) (American Psychiatric Association, 1994) contrasts these disorders, which are categorized as "Axis II," with disorders that represent discrete episodes of mental illness, which are categorized as "Axis I."

The presence of personality disorder among incarcerated women has been observed in multiple

studies from different countries and regions. Hurley and Dunne (1991) examined female prisoners in Queensland, Australia using the Structured Clinical Interview of DSM-III-R (SCID). Results indicated that nearly 10% of the women met diagnostic criteria for Antisocial Personality Disorder (APD), while over 17% were characterized as having Borderline Personality Disorder (BPD). Along similar lines, Binckley et al. (1994) found that 22% of women entering Oregon's prison system met criteria for Antisocial Personality Disorder. Teplin et al. (1996) observed that nearly 14% of the female jail detainees in Chicago met criteria for APD, while Jordan et al. (1996) detected a six month prevalence rate of nearly 12% for APD and a 28% two-year prevalence rate for BPD among North Carolina female felons.

These studies suggest that the presence of a personality disorder is many times more prevalent among female prison samples than community samples, although perhaps not as prevalent as among male prison inmates. Antisocial Personality Disorder and Borderline Personality Disorder appear to feature most prominently among the female populations. These two disorders, in conjunction with Histrionic Personality Disorder (HPD) and Narcissistic Personality Disorder (NPD), constitute the "Cluster B" personality disorder category. Cluster B personality disorders encompass long-standing relational problems characterized by impulsive, dramatic, and exploitative behavior that often reflects a pervasive disregard for others or a lack of awareness of the effect that the individual exerts on others. Based upon these structural characteristics, it is not surprising to find such forms of pathology over-represented among individuals who commit serious violations of societal standards.

### *Literature Pertaining to Victimization Histories of Incarcerated Women*

The past decade has been characterized by a growing awareness of the high rates of victimization reported by incarcerated women (Brown et al., 1999). Recognition of the high rates of childhood abuse reported by these women has focused interest on the relationship between these early and sustained forms of trauma and the high degree of evident psychological distress in adulthood. Although different research methodologies have resulted in widely varying estimates of prior victimization, there is general agreement that female prisoners have endured physical and sexual abuse well beyond that of the general population (American Correctional Association, 1990; Bloom, Chesney, & Owen, 1994; Fletcher, Rolison, & Moon, 1993; Sargent, Marcus-Mendoza, & Chong, 1993; Snell & Morton, 1994). The Bureau of Justice Statistics (Greenfeld & Snell, 1999) estimates that over one-half of women in state prisons have experienced physical and sexual abuse in the past, with one-third of these women having been abused by an intimate and one-quarter having been abused by a family member.

Most recently, Browne, Miller, and Maquin (1999) initiated a study of 150 incarcerated women as part of an investigation of the relationship between family violence and drug abuse by women. Differentiating six types of violence (severe physical violence by parental figures, child sexual molestation, severe physical aggression, rape by intimate partners in adulthood, physical assault by strangers in adulthood, and sexual violence by strangers in adulthood), the authors conducted interviews with a random sample of women drawn from the general population at the Bedford Hills Maximum Security Correctional Facility over a one-year period. The authors found that

70% of the women reported experiencing severe physical violence from a parental or care-giving adult during childhood and/or adolescence and 59% reported some form of sexual abuse including vaginal, anal or oral penetration. When examining the relationship between earlier and later victimization, Browne et al. found that 80% of the women who reported severe physical abuse as children also reported experiencing severe intimate violence by a caretaker; 40% of the women who reported being sexually assaulted before age 18 reported being sexually assaulted by non-intimates in adulthood. Browne et al. argue that these results highlight the need for more research into the mechanisms by which this type of victimization contributes to women's later involvement in the criminal justice system; the impact of victimization histories on adjustment to prison; and the types of resiliency factors that differentiate between those victimized women who become involved with the criminal justice system and those who do not.

This emergent body of research suggests some degree of continuity between the childhood violence perpetrated against these women and the repetition of this type of experience in adult life. While the self-report nature of the data contained in all these studies confuses any linear or causative explanations of the results, the consistency of findings does suggest a pattern that is clearly relevant to a fuller understanding of the trajectories that culminate in the incarceration of many of these women. Prior research posits that the transmittal of violence from one generation to another may occur biogenetically (DiLalla & Gottesman, 1991) or through parent-child interactions and abuse (Pollock, McBain, & Webster, 1989; Widom, 1988).

## *Literature Pertaining to Violent Crime Perpetrated by Women*

National data indicate that women commit far fewer violent crimes than do men (FBI, 2000). However, emerging research suggests that among those with severe forms of mental illness, these differences in rates of violence begin to disappear. Lidz, Mulvey, and Gardner (1993) tracked 357 matched pairs of patients released from a psychiatric institution for six months and found that 49% of the women and 42% of the men committed violent acts in the first six months following release. Robbins, Monahan, and Silver (in press) compared the violence perpetrated by 667 men and 469 women during the year following their hospitalization in three acute psychiatric inpatient facilities. They found comparable rates of violence between the males and females although there were gender differences in the situational correlates of the violent behavior. The women tended to be violent toward members of their own family, in the home, and while on medication. The women were also found to inflict significantly less serious injury and to less often be arrested following their violent behavior. Gottlieb, Gabrielsen, and Kamp (1987) studied homicide offenders in Copenhagen over a 25-year period and found that a large proportion of the female perpetrators were psychotic. When psychosis was present, the risk of homicide increased sixteen times for women and six times for men.

Research associated with risk assessment for violent behavior has also focused on the role of character pathology as a predisposing factor to higher rates of aggressive and threatening behavior. Generally, this research has been conducted with men and reveals higher levels of community and institutional violence among individuals meeting criteria for Borderline

Personality Disorder (Snyder, Pitts, & Pokorney, 1986; Stone, 1990) and Antisocial Personality Disorder (Robins, Tipp, & Przybeck, 1991; Bland & Orr, 1986; Hall, 1988, Heilbrun, 1990; Wang and Diamond, 1999) as well as the psychopathy construct (Hare, Hart, & Harpur, 1991; Rice, Harris, & Quinsey; 1990; Harris, Rice, & Cormier, 1991; Widiger & Trull, 1994). Comorbidity with depression and substance abuse has been found to exacerbate the impulsive and aggressive tendencies associated with these disorders.

Although the connection between character disorders (particularly psychopathy and Antisocial Personality Disorder) and violent behavior has been well documented among men, far less research has examined this connection among women. Brownstone and Swaminath (1989) examined 91 women committed to a forensic psychiatric unit and found that the two most common personality disorders among this group were Histrionic Personality Disorder and Antisocial Personality Disorder. Both were associated with increased violent behavior on the unit. The authors noted that women diagnosed with Antisocial Personality Disorder were more impulsive and emotionally unstable than were men with the same diagnoses.

### *Descriptive Statistics*

In examining data generated by the 802 inmates in the screening sample, we focused on assessing the relationship between several interrelated experiences and vulnerabilities, including symptoms of psychiatric distress, the presence of character pathology and a history of abuse, the incarcerating crime and the perpetration of violence during incarceration among female inmates.

Table 4 summarizes the means and T Scores for the 10 psychopathology scales on the Brief Symptom Inventory (BSI) for the prison sample, as well as the T Scores for the female nonpatient, outpatient, and inpatient standardization samples.

Table 4

Prison Sample and Inpatient, Outpatient and Nonpatient Standardization Samples for the Brief Symptom Inventory (Axis I Symptoms)

Scale	Prison (n=798)		Standardization Samples	
	Mean (SD)	T Score	Outpatient (n=577) T Score	Inpatient (n=265) T Score
Somatization	0.84 (0.85)	62	63	63
Obsessive-Compulsive	1.36 (1.06)	65	66	65
Interpersonal-Sensitivity	1.31 (1.10)	65	67	67
Depression	1.40 (1.01)	66	69	68
Anxiety	1.14 (1.00)	63	69	67
Hostility	1.07 (1.00)	66	67	63
Phobic Anxiety	0.60 (0.86)	63	65	66
Paranoid Ideation	1.59 (0.98)	70	65	65
Psychoticism	1.31 (1.00)	72	72	71
Global Severity Index	1.25 (0.84)	69	71	69

Note. T Scores based on Adult Female Nonpatient norm ( $M = 50$ ,  $sd = 10$ )

As summarized, the women inmates reported high degrees of psychological distress on all 10

scales and were significantly above the nonclinical sample, represented by a T score of 50. As illustrated, their degree of reported distress was similar in many respects to that reported by two large inpatient and outpatient female samples. The prison sample was one-half standard deviation above both patient standardization samples on Paranoid Ideation.

Table 5 summarizes BSI scale scores by age, race, education, marital status, and children. Six of the BSI scales were significantly different between the two age categories non under and over 32 years. The younger women reported higher scores on Hostility, Interpersonal Sensitivity, Paranoid Ideation, Psychoticism, and Global Severity Index. The older women reported higher scores on Somatization. Consistent with past literature, women of ethnic minorities reported less distress across scales than Caucasian women. This included lower mean scores on Anxiety, Depression, Interpersonal Sensitivity, Obsessive-Compulsive, Psychoticism, Somatization, and Global Severity. Education differentiated the inmates on seven of the BSI scales. Those who were more educated had lower mean scores on Hostility, Interpersonal Sensitivity, Obsessive-Compulsive, Paranoid Ideation, Phobic Anxiety, Psychoticism, and Global Severity. BSI scores for four of the scales differed by whether the inmates had ever been married. Those who had been married were higher on Anxiety, Depression, and Somatization, while those who had always been single were higher on Hostility. There were no significant differences on the BSI scales between women who had become parents and those who had not.

Table 5

BSI Scale Means by Demographics

	Anxiety	Depression	Hostility	Interpersona l Sensitivity	Obsessive - Compulsive	Paranoid Ideation	Phobic Anxiety	Psychoticis m	Somatic	Global Severity Index
<b>Over Age 32</b>										
Yes	1.14	1.35	0.88***	1.21**	1.34	1.44***	0.56	1.23*	0.92**	1.18*
No	1.15	1.44	1.31	1.41	1.39	1.74	0.64	1.38	0.75	1.31
<b>Minority Status</b>										
Yes	1.00***	1.23***	1.12	1.19***	1.24***	1.52	0.60	1.19***	0.78*	1.14***
No	1.35	1.64	1.03	1.48	1.54	1.67	0.60	1.45	0.93*	1.40
<b>High School Grad</b>										
Yes	1.12	1.38	1.00*	1.20**	1.28*	1.48*	0.50**	1.21*	0.82	1.19*
No	1.16	1.40	1.17	1.41	1.45	1.69	0.70	1.39	0.86	1.30
<b>Ever Married</b>										
Yes	1.23**	1.48*	0.98**	1.35	1.40	1.59	0.64	1.35	0.95***	1.29
No	1.04	1.31	1.18	1.25	1.33	1.55	0.56	1.24	0.71	1.20
<b>Children</b>										
Yes	1.14	1.40	1.05	1.29	1.37	1.57	0.62	1.30	0.85	1.25
No	1.17	1.38	1.19	1.36	1.34	1.60	0.54	1.30	0.76	1.23

\*p ≤ .05. \*\*p ≤ .01. \*\*\*p ≤ .001.

In examining the patterns demonstrated across the various subscales of the BSI, we found all nine scales to be highly correlated with each other and with the Global Severity Index (all correlations significant at  $p < .001$ ). We subsequently conducted a factor analysis to ascertain whether a more parsimonious structure for the data could be determined. The exploratory common factor analysis of the 53 items supported a one-factor solution, with an Eigenvalue of 20.9 for the sole factor. Because of the high correlations among the BSI subscales and the factor analytic support for using the BSI as a single scale, the Global Severity Index was subsequently used for further analyses.

Table 6 summarizes BSI scale scores by prior incarceration, time served, sentence, and perpetration of either violent or drug crimes. There were no significant differences on BSI mean scale scores for prior incarceration. Hostility was higher in those women with sentences of less than 5 years and those who had perpetrated violent crimes. The perpetration of violent crime also differentiated scores on the Obsessive-Compulsive and Paranoid indices, with those women who perpetrated violent crime having higher scores on these two scales. The perpetration of drug crimes differentiated the women only on the Paranoid scale, with drug crime perpetrators having lower scores. The large number of comparisons suggests that these significant differences may reflect chance results.

Table 6

BSI Scale Means by Crime Characteristics

	Anxiety	Depression	Hostility	Interpersonal Sensitivity	Obsessive - Compulsive	Paranoid Ideation	Phobic Anxiety	Psychoticism	Somatic	Global Severity Index
<b>Prior Incarceration</b>										
Yes	1.20	1.42	1.16	1.29	1.47	1.63	0.67	1.37	0.86	1.30
No	1.13	1.38	1.05	1.31	1.32	1.57	0.56	1.28	0.83	1.23
<b>Sentence</b>										
< 5 years	1.17	1.48	1.24***	1.36	1.47	1.68	0.58	1.38	0.89	1.30
> 5 years	1.16	1.39	0.97	1.29	1.33	1.57	0.64	1.30	0.82	1.23
<b>Violent Crime</b>										
Yes	1.26	1.54	1.28**	1.42	1.53*	1.82***	0.68	1.38	0.93	1.36
No	1.12	1.38	0.99	1.28	1.33	1.53	0.59	1.31	0.81	1.22
<b>Drug Crime</b>										
Yes	1.09	1.32	0.99	1.24	1.33	1.48*	0.57	1.31	0.84	1.19
No	1.19	1.47	1.11	1.35	1.41	1.66	0.63	1.33	0.85	1.29

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

Table 7 summarizes scores on the Barratt Impulsivity Scale (BIS) by demographic characteristics. The BIS is comprised of three subscales: nonplanning, motor, and cognitive. Age was the factor that was most consistently predictive of scores on the BIS. As summarized, women who were over the age of 32, women of minority status, inmates who had graduated from high school, and women who had ever been married consistently scored lower on the Nonplanning and Cognitive subscales.

Table 7 Impulsivity Scale Scores by Demographics

	Nonplanning	Motor	Cognitive
<b>Over Age 32</b>			
Yes	2.42*	2.21*	2.17**
No	2.50	2.30	2.30
<b>Minority Status</b>			
Yes	2.42*	2.24	2.20
No	2.51	2.28	2.29
<b>High School Grad</b>			
Yes	2.39***	2.22	2.15*
No	2.54	2.72	2.32
<b>Ever Married</b>			
Yes	2.41*	2.22	2.18*
No	2.51	2.28	2.29
<b>Children</b>			
Yes	2.47	2.26	2.23
No	2.40	2.24	2.25

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

Table 8 summarizes the mean impulsivity scale scores by crime characteristics: prior incarceration, time served, sentence, and perpetration of violent or drug crimes. Having been incarcerated before and having perpetrated violent crime predicted higher scores on the Motor subscale, with prior incarcerations also predicting higher score on the Cognitive subscale.

Table 8

Impulsivity Scale Scores by Crime Characteristics

	Nonplanning	Motor	Cognitive
<b>Prior Incarceration</b>			
Yes	2.51	2.34**	2.32**
No	2.43	2.21	2.20
<b>Sentence</b>			
< 5 years	2.46	2.26	2.23
> 5 years	2.48	2.25	2.25
<b>Violent Crime</b>			
Yes	2.44	2.17**	2.22
No	2.48	2.29	2.24
<b>Drug Crime</b>			
Yes	2.51	2.29	2.30
No	2.45	2.25	2.22

\*\*p ≤ .01.

Table 9 summarizes rates of physical and sexual abuse before age 18 and 6 months prior to entering prison. As summarized, 55% (n = 431) of the women reported having been the victim of sexual abuse (rape, sexual assault, or incest) before age 18, while 39% (n = 303) reported

experiencing physical assault by either an adult or another child before age 18. The rates of physical and sexual abuse in the six months prior to incarceration were more modest. As summarized, 12% reported sexual assault and 19% reported other physical assault. As with the scores on the BSI, age and minority status were both found to be significantly correlated ( $p < .001$ ) with sexual and physical victimization before age 18. Both were negative correlations, indicating that the younger, nonminority women reported higher levels of victimization.

Table 9

Self-reported rates of victimization in childhood and before incarceration

	Frequency	Percent
Victimization before age 18		
Sexual		
Yes	431	55
No	346*	45
Physical		
Yes	305	39
No	472	61
Victimization 6 months before entering prison		
Sexual		
Yes	90	12
No	687	88
Physical		
Yes	149	19
No	628	81

Table 10 and Table 11 summarize the impact of victimization prior to the age of 18 and the six-month period prior to the incarceration of each inmate on the mean scale scores of the Brief Symptom Inventory and the Barratt Impulsivity Scale. Fifty-six percent of the inmates reported sexual victimization before the age of 18 (including rape, sexual assault, and incest) and 39% reported physical assault before the age of 18 (including assault by an adult or another child). Both were highly significant on all 9 BSI subscales and the Global Severity Index.

The results summarized in Tables 10 and 11, which are highly significant and surprisingly consistent, are suggestive of the distress experienced or reported by those who have experienced rather extreme forms of sexual and physical assault as children. Physical assault within the last six months prior to incarceration was also very consistent in its ability to predict higher scores on each of the 9 BSI subscales and the Global Severity Index. Physical assault in the last six months was significant at the .01 level for Hostility, Obsessive-Compulsive, and Phobic Anxiety. Sexual assault within six months prior to incarceration was consistently predictive, though at a lower significance level on the BSI scales. The impact of early victimization was also observed on the Barratt Impulsivity Scales.

Table 10.

BSI Scale Means by Victimization

	Anxiety	Depression	Hostility	Interpersonal Sensitivity	Obsessive - Compulsive	Paranoid Ideation	Phobic Anxiety	Pyshocticism	Somatic	Global Severity Index
<b>Sexual Assault Before Age 18</b>										
Yes	1.20	1.42	1.16	1.29	1.47	1.63	0.67	1.37	0.86	1.30
No	1.13	1.38	1.05	1.31	1.32	1.57	0.56	1.28	0.83	1.23
<b>Physical Assault Before Age 18</b>										
Yes	1.17	1.48	1.24***	1.36	1.47	1.68	0.58	1.38	0.89	1.30
No	1.16	1.39	0.97	1.29	1.33	1.57	0.64	1.30	0.82	1.23
<b>Violent Crime</b>										
Yes	1.26	1.54	1.28**	1.42	1.53*	1.82***	0.68	1.38	0.93	1.36
No	1.12	1.38	0.99	1.28	1.33	1.53	0.59	1.31	0.81	1.22
<b>Drug Crime</b>										
Yes	1.09	1.32	0.99	1.24	1.33	1.48*	0.57	1.31	0.84	1.19
No	1.19	1.47	1.11	1.35	1.41	1.66	0.63	1.33	0.85	1.29

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

Table 11

Impulsivity Scale Scores by Victimization

	Nonplanning	Motor	Cognitive
<b>Sexual Assault Before Age 18</b>			
Yes	2.47	2.29**	2.28**
No	2.43	2.19	2.17
<b>Physical Assault Before Age 18</b>			
Yes	2.50*	2.32**	2.32**
No	2.42	2.20	2.17
<b>Sexual Assault Last Six Months</b>			
Yes	2.47	2.28	2.22
No	2.45	2.24	2.23
<b>Physical Assault Last Six Months</b>			
Yes	2.43	2.31	2.29
No	2.46	2.23	2.22

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

As summarized in Table 11, sexual assault before the age of 18 predicted more Motor Impulsivity and Cognitive Impulsivity, while physical assault before the age of 18 predicted significantly higher mean scores on all three subscales, i.e., Nonplanning, Motor, and Cognitive. Sexual and physical assault within the six months preceding incarceration was not predictive of any impulsivity mean scores.

Table 12 summarizes self-report of violence during incarceration as assessed by the Prison Violence Inventory. As summarized, the inmates reported a mean of .97 ( $SD = 1.83$ ) behaviors or behavioral categories. The most frequently endorsed items were threatening to hit, throw, or do harm (24%) and pushing, grabbing, or shoving (20%); forced sex was the rarest, but was nonetheless endorsed by 2% of the women. To compare mean scores by race and age, the items were collapsed into composite variables representing threats, physical assaults, and sexual assault. Younger women (age 32 or under) were more likely to report threats ( $t = 8.4, p < .001$ ) and physical assaults ( $t = 7.7, p < .001$ ). Minority women were also more likely to report threats ( $t = -3.05, p < .01$ ) and physical assaults ( $t = -2.6, p < .01$ ).

In order to explore the validity of the self-reported violence, the total number of endorsed items was correlated with counts of violent institutional misconduct ( $r = .35, p < .001$ ), societal rule violations ( $r = .25, p < .001$ ), and institutional rule violations ( $r = .32, p < .32$ ). These correlations demonstrated that the relationship between self-report violence and violent institutional infractions was the most robust, a finding that we interpreted as at least minimal substantiation of the self-report data regarding violence perpetrated within the institution. These findings suggest that, despite the very controlled nature of a prison environment, aggressive and threatening behavior continues to occur. The nature of the violence is minimal in the majority of cases, although behavior constituting simple and aggravated assault does occur despite the many precautions designed to control its eruption.

ANOVA analyses examining the relationship between demographic characteristics and crime

history indicate that age is significantly correlated with perpetration and victimization of one or more types of violence (not including lies or spreading rumors) while incarcerated, with women under age 32 reporting more of both. Minority status was also significantly related to victimization but not perpetration, with minorities reporting more victimization. Other demographic variables which were not significant predictors of either perpetration or victimization were education, marital status, and children. A further test, based on crime characteristics, indicates that either a longer sentence or having perpetrated a violent crime predicts lower endorsement of perpetration of violent behavior since transfer to the Fluvanna Correctional Center, while having perpetrated a violent crime predicts lower endorsement of victimization since transfer. While initially counter-intuitive, these findings suggest that long-term inmates become more adept at creating and maintaining a more stable and collaborative social environment, while more of the instability and aggressive behavior is concentrated among the shorter-term prison population. In fact, a substantial group of long-term inmates (over 15 years) successfully petitioned for their own wing, separate from short-term inmates, precisely because of the upheaval and instability found among shorter-term inmates.

Table 12 Self-report of Violence during Incarceration

Item	Frequency (%)
<b>Threaten to hit, throw, or do other type of harm</b>	
Yes	184 (24)
No	587 (76)
<b>Thrown something</b>	
Yes	105 (14)
No	667 (86)
<b>Pushed, grabbed, or shoved</b>	
Yes	156 (20)
No	616 (80)
<b>Slapped</b>	
Yes	102 (13)
No	671 (87)
<b>Kicked, bitten, or choked</b>	
Yes	77 (10)
No	696 (90)
<b>Hit with fist or beat up</b>	
Yes	79 (10)
No	694 (90)
<b>Threaten with object used as weapon</b>	
Yes	31 (4)
No	729 (96)
<b>Anything else considered violent</b>	
Yes	39 (5)
No	730 (95)

Table 13 summarizes the mean number of criteria endorsed and the frequency endorsing number required for diagnosis using the SCID II Screen.

Table 13

SCID II Personality Questionnaire: Mean number of criteria endorsed and frequency endorsing number required for diagnosis

Personality Disorder	Mean # of Criteria Endorsed (SD)	Frequency Endorsing # Required for Diagnosis (%)
Paranoid	4.04 (2.08)	491 (61)
Schizotypal*	3.55 (1.56)	250 (31)
Schizoid	3.21 (1.59)	332 (42)
Borderline	5.01 (2.72)	461 (58)
Histrionic**	1.97 (1.62)	73 (9)
Narcissistic	4.96 (2.39)	470 (59)
History of Conduct Disorder	3.36 (3.60)	375 (47)
Avoidant	2.91 (1.96)	286 (36)
Dependent	2.20 (1.92)	114 (14)
Obsessive-Compulsive	3.92 (1.67)	478 (60)

\*Three Criteria Not Assessed by Screen.

\*\* Two Criteria Not Assessed by Screen

As summarized in Table 13, a large proportion of the sample endorsed a large number of criteria and screened positively for the presence of an array of the DSM-IV Axis II Personality Disorder.

Over 50% screened positively for Paranoid, Borderline, Narcissistic, and Obsessive-Compulsive

Personality Disorders. As the SCID II Screen is designed to screen accurately for the absence rather than the presence of personality disorders (in order to delimit the diagnostic categories that are pursued upon interview), we assumed that these scores were at best proximate measures of personality disturbances. Chi Square Analyses were conducted to compare group frequencies in younger (age 32 and under) and older (over age 32) inmates and minority and nonminority inmates on endorsing the number of criteria required for diagnosis of a personality disorder. Significantly more younger women endorsed the required number of criteria for Paranoid PD ( $\chi^2 = 25.6, p < .001$ ), Schizotypal PD ( $\chi^2 = 5.08, p < .05$ ), Borderline PD ( $\chi^2 = 9.57, p < .01$ ), Histrionic PD ( $\chi^2 = 9.55, p < .01$ ), Narcissitic PD ( $\chi^2 = 11.05, p < .001$ ), and Conduct Disorder/Antisocial ( $\chi^2 = 37.13, p < .0001$ ). More minority than nonminority women endorsed the required number of criteria for Schizoid ( $\chi^2 = 11.36, p < .001$ ), Borderline PD ( $\chi^2 = 10.51, p < .01$ ), Narcissistic PD ( $\chi^2 = 36.92, p < .0001$ ), Avoidant PD ( $\chi^2 = 9.77, p < .01$ ), Dependent PD ( $\chi^2 = 6.19, p < .05$ ), and Obsessive-Compulsive PD ( $\chi^2 = 4.65, p < .05$ ).

### *Predictive Analyses Regarding the Perpetration of Violence*

To determine the relationship between mental health indices and violent behavior, we randomly divided the larger sample of 802 inmates into two groups. From the first of these two subsamples, a group of 311 inmates with complete demographic, crime history, Brief Symptom Inventory (BSI), SCID-II Screen, Prison Violence Inventory (PVI) and Victimization Inventory (Vic-I) data were identified. A series of three multiple regression analyses examined the relationship between institutional violence (Prison Violence Inventory) and (1) symptom distress

(BSI Global Severity Index); (2) history of victimization (self-reported physical or sexual abuse before age 18); and (3) positive screening for Borderline, Histrionic, Narcissistic, or Antisocial Personality Disorder (SCID-II Screen). In addition, we undertook a separate series of three multiple regressions with these same dependent variables predicting whether the inmate was incarcerated for a violent crime. As summarized above, the correlational analyses had demonstrated significant differences in the degree of psychiatric distress, personality disturbance, and victimization with the demographic variables of age and minority status. We therefore entered these two variables first into all six regression analyses.

Age Level (under 32 vs. over 32) and Minority Status was significantly related to Institutional Violence ( $F(2, 308) = 18.57, p < .001, \text{adjusted } R^2 = .10$ ). Both younger women and minority women were more likely to self-report violence. The multiple regressions run to explore factors related to institutional violence were all significant. In the first regression analysis, the BSI Global Severity Index significantly improved prediction of institutional violence beyond that afforded by Age Level and Minority Status ( $F \text{ Change}(1, 307) = 23.63, p < .001; R^2 \text{ change} = .06$ ; Final Model adjusted  $R^2 = .16$ ). In the second regression analysis, potential presence of Cluster B character pathology was also associated with institutional violence, beyond predictability afforded by age and racial status ( $F \text{ change}(4, 304) = 9.02, p < .001; R^2 \text{ change} = .10$ ; Final Model adjusted  $R^2 = .19$ ). Positive screening for Antisocial PD or Histrionic PD significantly contributed to the regression equation (Antisocial PD:  $b = .16; t(311) = 2.80, p < .01$ ; Histrionic PD:  $b = .17; t(311) = 3.08, p < .01$ .) Positive screening for Borderline BD or Narcissistic BD did not contribute beyond effects provided by the other personality indicators. In

the final regression analysis, self-reported victimization was significantly related to institutional violence beyond demographic variable contributions ( $F$  Change (2, 306) = 5.65,  $p < .01$ ;  $R^2$  change = .03; Final Model adjusted  $R^2 = .13$ ). Reported early sexual abuse was associated with elevated violence ( $b = .14$ ;  $t(313) = 2.10$ ,  $p < .05$ ; Final Model adjusted  $R = .13$ ). Reported physical abuse did not significantly contribute to the regression equation.

Based upon these initial multivariate findings and the apparent associations between current psychiatric distress, presence of cluster B character pathology, and early victimization experiences with self-reported violence, we subsequently ran a logistic regression analysis on the second subsample of inmates to evaluate the collective effect of screening variables in distinguishing women with high and low levels of institutional violence. Women who had reported two or more violent incidents (High Violence Group,  $N = 73$ ) were compared to a randomly selected subsample of those who reported fewer than two incidents (Low Violence Group,  $N = 79$ ). Independent variables included Age Level, Minority Status, BSI Global Severity Index, results of screening for each cluster B personality disorder, and self-reported physical or sexual victimization.

The logistic regression model including these screening variables successfully distinguished the two groups of inmates ( $\chi^2(9, N = 152) = 42.49$ ,  $p < .001$ ; Nagelkerke pseudo  $R^2 = .33$ ). The model showed a good fit to the data ( $\chi^2(8, N = 152) = 12.75$ , n.s.). Results indicated that age level and a positive screen for antisocial personality disorder significantly increased the likelihood that an inmate was categorized in the High Violence Group (Age Level Wald Statistic

(1, N=152) = 9.97,  $p < .01$ ; Antisocial Positive Screen Wald Statistic (1, N=152) = 7.08,  $p < .01$ ). Presence of a positive screen for Antisocial Personality Disorder and an age level less than 32 years each tripled the odds that a woman would have been classified within the High Violence category. The model accurately classified 71.7% of the women (Specificity = 72.2%, Sensitivity = 71.2%, Positive Predictive Power = 70.3, Negative Predictive Power = 73.1). Results are summarized in Table 14.

Table 14

Summary of Preliminary Univariate T-tests and Logistic Regression Analysis Predicting Inmate Violence Group (N = 152)

Variable	Univariate t-test (df = 1.150)	Logistic Regression		
		B	SE	Wald Statistic
Age Level	4.72***	1.23	.39	9.96**
Minority Status	1.43	0.56	.42	1.78
BSI Severity Scale	2.35*	0.08	.30	.08
ASPD Screen	5.12***	-1.10	.41	7.08**
Histrionic PD Screen	1.60	-0.21	.70	.09
Borderline PD Screen	3.30***	-0.63	.52	1.45
Narcissistic PD Screen	3.36**	-0.37	.46	.65
Early Sex Abuse	0.42	0.10	.47	.05
Early Physical Abuse	1.39	-0.17	.46	.13

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

These results suggest racially divergent trajectories concerning the factors that influence the inmates' movement toward and response to incarceration in a maximum security prison. In our study, the nonminority women were characterized by significantly higher rates of Axis I psychopathology as measured by the BSI and higher rates of sexual and physical victimization as children. In contrast, minority women reported higher levels of endorsement of the Axis II or personality symptoms and higher rates of violence while incarcerated. These differences could reflect processing biases within the criminal justice system, subjective differences in the way that internal distress is experienced and described by minority and nonminority women, and/or differences in self-report on research instruments according to ethnic groupings. It is possible, as suggested by Teplin et al. (1996) and Jordan et al. (1996), that only the most impaired and victimized nonminority women reach prison while minority women are prosecuted and sentenced according to a harsher, unspoken standard. Alternatively, cultural differences may cause white women to experience and describe their psychological distress in terms of symptomatic experiences and early victimization, while minority women may express the same type of internal distress through the more outwardly oriented symptoms of personality disturbance and violence toward others. Moreover, these differences may reflect culturally determined differences in response style to self-report research measures. Minority women may be more hesitant about acknowledging experiences that are indicative of "craziness" and more comfortable identifying themselves as exploitative and threatening toward others. They might further describe and experience themselves as less victimized as children regardless of the actual perpetration of abuse.

The types of personality disorders that were endorsed by the SCID II Screen for the 802 inmate were surprisingly varied across the three Clusters (Cluster A, Cluster B, and Cluster C). The most common set of criteria met were those of Paranoid Personality Disorder, Borderline Personality Disorder, Narcissistic Personality Disorder, Obsessive-Compulsive Disorder and Antisocial Personality Disorder. The positive screenings for Paranoid Personality Disorder were somewhat unexpected. Upon further query, it became apparent that the prison was characterized by a sense of interpersonal alienation characterized by a suspicious, distant and constantly wary approach to others which was routinely described by the inmates as essential to survival in this unique environment. Whether these attitudes preceded or developed in response to incarceration is the topic of further study at this time. The Borderline criteria were reported by almost a quarter of the women. These criteria involve impulsive, self-damaging, and unstable behavior that appears in many instances to have been related to the criminal behavior that resulted in the incarceration of these women. The endorsement of sufficient criteria to screen positive for Obsessive-Compulsive Disorder derived from what appeared to be a somewhat defensive endorsement of high standards for determining what is right and wrong and a rather rigid and stubborn personality style in relationship to others.

The screening questions for Antisocial Personality Disorder were those for a Conduct Disorder (by definition, prior to age fifteen), the prerequisite for the DSM-IV diagnoses of Antisocial Personality Disorder in adulthood. Despite these rather stringent criteria (which have not been ascertained to be as relevant to female as compared to male adult antisocial behavior), almost half of the women reported behavior that would have warranted the diagnosis of a Conduct

Disorder when they were children. This finding suggests that the disturbances that may have contributed to their incarceration were apparent in disruptive, assaultive, and rule-breaking behavior much earlier in their lives. In terms of prevention, this finding highlights the importance of interventions aimed at childhood and adolescent behavioral problems as a means of mitigating against the emergence of violent behavior in adulthood.

The multivariate analyses predicting the violence perpetrated by these 802 women were of interest both because of their significance and because of their nonsignificance. We were not successful in predicting offense violence using any of the mental health or victimization measures contained within the current study. This lack of relationship, no doubt, arises to some extent from the rather unique characteristics of many murderers, both male and female. Many murderers are not antisocial or psychopathic, and their rates of recidivism are the lowest of all violent offenders. Moreover, the frequency with which offenses are plea-bargained to a less serious crime often distorts the relationship between instant offense and actual crime behavior.

Alternatively, institutional violence was found to be consistently related to certain demographic characteristics and mental health and victimization factors. Age, minority status, higher scores on the BSI Global Severity Index, a positive screen for Antisocial or Histrionic Personality Disorder, and sexual victimization before the age of 18 years all contributed to a significant model predicting institutional violence. These results suggest that the behavior that culminates in the incarceration of women and the perpetration of violence within this highly structured environment is a multi-dimensional trajectory that is characterized, in most cases, by a lengthy

pre-morbid period of abuse, psychiatric disturbance and general life maladjustment. The logistic regression that we ran on the second half of the sample was both parsimonious and robust in its ability to identify those women who were at high risk for being violent within the institution. All of the independent variables except for age and screening for Antisocial Personality Disorder fell out of the model, yet the model was highly significant and predicted both high institutional violence and low institutional violence with a sensitivity of 71% and a specificity of 72%. It is unusual to find single variables that contribute equally to high rates of sensitivity and specificity, suggesting that these variables are particularly relevant to the emergence of prison-based violence. The influence of race, which was apparent throughout the preliminary analyses, dropped out of this model, suggesting that the positive screening for personality disturbance found to be high among the minority inmates was the underlying determinative factor.

*Goal 2: To explore the impact of these experiences and conditions on institutional adjustment and to validate the Prison Adjustment Inventory (PAQ), a measure developed for use with men, on a female sample.*

#### *Relevant Literature Pertaining to Prison Adjustment*

As the number of incarcerated women increases in both state and federal institutions (Bureau of Justice Statistics, 1999), interest in measuring how women adjust to this unique living environment becomes increasingly relevant to policy makers, mental health practitioners, and agencies mandated to provide supervision and care of these women. Liability issues associated

with self-harm or harm toward others, humanitarian interests in the mental and physical health of these women, and a rehabilitative interest imbued with an awareness of the obvious societal costs intrinsic to prolonged and repeat incarceration combine to highlight the necessity of understanding the experience of these women as they undergo a process of incarceration and containment. Thus far, the majority of research on this topic has focused on men. This gender-specific focus has been influenced by the far greater number of men than women who are incarcerated and further influenced by the less articulated belief that women adjust more easily and with less overt disruption than men. The few comparative studies that exist point to substantial differences in adjustment patterns between male and female inmate populations (Koban, 1983; Linqvist & Linqvist, 1997; Sobel, 1982).

The early research on adjustment among male inmates was directed toward arriving at methods for best classifying inmates for potential differential treatment or corrective actions. These initial studies used the Minnesota Multiphasic Personality Inventory (MMPI) and later the ten-profile MMPI taxonomy developed by Megargee (Megargee & Bohn 1979) to determine classifications of offenders as they are related to different patterns of institutional adjustment (Carbonell, Megargee & Moorhead, 1984; Carey, Garske & Ginsberg, 1987; Davis, 1974; Hanson, Moss, Hosford, & Johnson, 1983; Wright, 1988). Although such methods were generally successful in ensuring the comprehensive classification of the majority of prisoners, the results were disappointing in usefully predicting actual patterns of prison behavior. In assessing penitentiary adjustment of 337 male inmates, Hanson, Moss, Hosford, and Johnson (1983) explored the relevance of demographic variables to the Megargee offender typology, to security designation,

and to custody classification. They found that custody classification and age were the most robust predictors of adjustment, with only one of the ten Megargee types relating to the measures of overall institutional adjustment.

The second generation of research concerning prison adjustment focused less on classification and more on the processes by which inmates improved or deteriorated in their level of functioning. MacKenzie and Goodstein (1985) examined the adjustment of 1270 male inmates incarcerated in three United States prisons. They examined the relationship between demographic variables, measures of prosocial lifestyle (e.g., employment prior to incarceration), degree of previous experience with the criminal justice system, instant offense, and a variety of affective measures. They found that inmates who were new to prison and who anticipated serving long sentences reported poorer adjustment than inmates who had already spent significant amounts of time in prison. Short-term inmates who were new to prison reported better adjustment than new inmates with longer sentences. Similar results were obtained by Zamble (1992).

Research concerning women in prison has focused on similar issues of change over time while also exploring differences between males and females in terms of their parenting experiences and the degree of psychiatric distress experienced in response to various types of environmental stress. MacKenzie, Robinson, and Campbell (1989) sought to examine the adjustment patterns of female inmates as they were determined by length of sentence and current time served. Inmates who were new to prison reported fewer perceived problems with their environment but were

more concerned about issues of safety and tended to organize themselves more consistently in groups referred to as "play families." Those inmates who had served significant amounts of time were much more concerned about real limitations in their environment including access to family, interesting work, and stimulating activities.

Further research has highlighted the significance of the parenting role for female inmates. Sobel (1982) examined differences in the educational and occupational opportunities offered male and female inmates and reviewed the various ways that incarceration impacted the mother-child relationship. Koban (1983) similarly examined the effects of incarceration on parenting and documented numerous ways in which females had greater difficulty adjusting to separation from children than did male inmates. Relative to men, women reported more difficulty in maintaining adequate contact with their children and a greater decline in the number of visits over time. Fogel (1993) and Fogel and Martin (1992) similarly documented the difficulties women experienced adjusting to separation from children and the consequent impact on their mental well-being.

Most recently, Linquist and Linquist (1997) attempted to compare the effects of gender and environmental stress on the mental health of male and female inmates. Using Derogatis' Brief Symptom Inventory (BSI; 1993), they found that women reported higher levels of distress on the somatization, obsessive-compulsive, depression, anxiety and psychoticism subscales as well as on the Global Severity Index. Being married was correlated with higher levels of distress, while being a parent, serving a longer sentence, and having experienced a prior incarceration were not. The degree of environmental distress was measured using the Environmental Quality Scale

(EQS), which sought to measure the perceived supply of seven environmental resources (privacy, safety, certainty, assistance, support, activity, and autonomy), and the Jail Preference Inventory (JPI), which examined the same seven dimensions using a comparison-by-pairs format. The authors found that environmental stress was more highly correlated with psychological distress for women, while issues of safety and activity correlated significantly with scores on the BSI for both the male and female inmates.

### *Prison Adjustment Instrumentation*

The Prison Adjustment Questionnaire (PAQ; Wright, 1985) was used to measure adjustment among the women in the current study. The PAQ was initially developed to explore differences in prison adjustment between black and white male inmates. Assuming differences in prior life experience and biases in official reporting, the PAQ was designed to assess comparative adjustment of prisoners within prison in contrast to the community, while also assessing discomfort with prison across several dimensions. The PAQ's dual intent of controlling for differences in prior life experience while also standardizing both subjective and behavioral dimensions of experience appeared to be particularly apt for use with women.

The PAQ assesses perceptions of comfort around inmates, comfort with staff, feelings of anger, frequency of illness, trouble sleeping, fears of being attacked, physical fights, heated arguments with inmates, heated arguments with staff and frequency of injury and exploitation. The measure was validated on a male sample by examining the relationship of factor-derived scales on the

PAQ with the number of institutional infractions, suicide attempts, and sick calls inmates had made in the past year. The factor analysis of the 20 PAQ items in Wright's (1985) sample suggested a three-factor solution: (1) the Internal Scale, which focused on subjective forms of distress such as being uncomfortable around people, getting angry and having trouble sleeping; (2) the External Scale, which involved behaviors that reflected a tendency toward fighting and arguing; and (3) the Physical Scale, which included aspects of physical discomfort and fear in which the inmate experienced problems with sickness, injury, and being taken advantage of by other inmates. Internal consistency coefficients ranged from .50 to .74, while correlations between scales were .30 to .40. Wright (1993) subsequently used the PAQ in a study of prison environment using Toch's (1977) theory of eight dimensions of climate or organizational context, defined and experienced by individuals sharing a common environment or context. Wright's results were similar to those found in other studies of organizational psychology; provision of support for self-advancement and improvement was related to positive prison adjustment, and prisons with more opportunities for self-sufficiency experienced fewer behavioral problems among inmates.

### *Descriptive Statistics*

As summarized in Table 15, there were 7 significant relationships between the demographic characteristics of the female inmates and their adaptation as measured by the three dimensional adaptation constructs (Internal, External, and Physical) as well as Global. Women under age 32 reported more behavioral problems on the external subscale, which was comprised of arguments

with inmates, arguments with guards, fights, and feeling angry. This relationship also resulted in the Global scale reflecting greater problems with adaptation among the younger women as compared to the older inmates. Minority status was related to significantly higher scores on the Internal, Physical, and Global scales, suggesting that African-American and other minority inmates experienced or reported fewer problems with adaptation, consistent with their reporting lower levels of psychological distress on the BSI, as described above. Both marital status (i.e., whether the inmate had ever been married) and having children were also significantly related to lower scores on the External dimension.

Table 15 Prison Adjustment Scale Scores by Demographics

	Internal	External	Physical	Global
<b>Over Age 32</b>				
Yes	1.23	0.57***	0.57	0.69*
No	1.28	0.83	0.60	0.80
<b>Minority Status</b>				
Yes	1.05***	0.70	0.51***	0.68***
No	1.55	0.68	0.70	0.85
<b>High School Grad</b>				
Yes	1.24	0.66	0.61	0.74
No	1.25	0.72	0.57	0.75
<b>Ever Married</b>				
Yes	1.28	0.58***	0.61	0.72
No	1.21	0.80	0.56	0.76
<b>Children</b>				
Yes	1.29	0.64**	0.59	0.74
No	1.12	0.88	0.61	0.80

Table 16 summarizes Prison Adjustment scale scores by the crime characteristic of the inmates.

Table 16

Prison Adjustment Scale Scores by Crime Characteristics

	Internal	External	Physical	Global
<b>Prior Incarceration</b>				
Yes	1.06*	0.71	0.52*	0.69
No	1.35	0.67	0.62	0.77
<b>Sentence</b>				
< 5 years	1.28	0.59**	0.61	0.72
> 5 years	1.26	0.79	0.55	0.77
<b>Violent Crime</b>				
Yes	1.38	0.76*	0.64	0.82*
No	1.22	0.64	0.56	0.71
<b>Drug Crime</b>				
Yes	1.09*	0.59*	0.51*	0.64*
No	1.33	0.71	0.61	0.80

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

Prior incarceration was significantly related to lower scores on the Internal subscale, comprised of discomfort around other inmates and discomfort around staff. The women who had experienced prior incarceration also reported lower scores on the Physical subscale, comprised of being injured or hurt, being sick, being afraid of being attacked, being afraid of being taken advantage of, and problems sleeping. As further summarized in Table 16, having a sentence of less than five years and having perpetrated a drug crime were significantly related to lower scores

on the External scale, whereas having perpetrated a violent crime was significantly related to higher scores in the same dimension. The women who had perpetrated a violent crime also had higher scores on Global maladjustment. Women charged with a drug crime also reported lower scores on the Physical scale.

Table 17 summarizes prison adjustment scale scores by victimization before age 18 or within six months of current incarceration. Sexual assault before age 18 was significantly related to External, Physical, and Global scores, all in the direction of substantially greater problems among those who had experienced sexual victimization as a child. Physical assault before age 18 was significantly related to Internal, External, Physical, and Global scores, again all in the direction of those inmates who had been physically abused as children having significantly higher maladjustment scores on the Prison Adjustment Questionnaire. In contrast to previous analyses, sexual assault in the six months preceding incarceration was predictive of lower levels of maladjustment on the Internal scale, whereas physical assault during the six months preceding incarceration was predictive of higher scores on the Internal, External, Physical, and Global scales. Consistent with earlier analyses, sexual and physical victimization as a child is consistently and highly related to problems with adjustment in adulthood.

Table 18 summarizes the prison adjustment scale scores by the various types of violence either perpetrated or experienced since incarceration at the Fluvanna Correctional Center for Women. The analyses indicate that women who admitted to perpetrating threats, assaults, forced sexual activity, or lies and rumors all reported significantly higher scores on the External scale. Those

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	External	Physical	Global
1	0.77***	0.66***	0.82***
1	0.58	0.48	0.64
1	0.78*	0.68**	0.85***
1	0.63	0.52	0.66
1	0.74	0.64	0.84
1	0.68	0.57	0.72
1	0.83**	0.70*	0.88**
1	0.65	0.55	0.70

\*p < .

Table 18 Prison Adjustment Scale Scores by Violence Since Incarceration

	Internal	External	Physical	Global
<b>Perpetrator</b>				
<b>Threats</b>				
Yes	1.30	1.11***	0.62	0.92***
No	1.21	0.54	0.57	0.67
<b>Assaults</b>				
Yes	1.32	1.09***	0.65	0.93***
No	1.20	0.56	0.56	0.67
<b>Forced Sex</b>				
Yes	1.93*	1.25**	0.40	0.99
No	1.22	0.67	0.58	0.73
<b>Lies/Rumors</b>				
Yes	1.09	1.17***	0.64	0.91**
No	1.23	0.61	0.57	0.71
<b>Victim</b>				
<b>Threats</b>				
Yes	1.49**	0.99***	0.75***	0.97***
No	1.10	0.53	0.50	0.62
<b>Assaults</b>				
Yes	1.42*	0.98***	0.72***	0.94***
No	1.15	0.56	0.52	0.65
<b>Forced Sex</b>				
Yes	1.56	1.01**	0.75*	0.99**
No	1.20	0.66	0.57	0.71
<b>Lies/Rumors</b>				
Yes	1.39***	0.86***	0.67***	0.87***
No	1.00	0.42	0.45	0.54

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

These results suggest some congruity between admitted perpetration of violence and self-report of maladjusted behavior, including argumentative and aggressive actions and angry feelings. As further summarized, women who reported being the victims of threats, assaults, and lies and rumors reported significantly higher levels of maladjustment on Internal, External, and Physical scales, resulting in higher scores on the Global scale as well. The women who reported being victimized by forced sexual encounters reported similarly higher levels of maladjustment on the PAQ, although the difference in terms of distress reported on the Internal dimension was not statistically significant.

Table 19 summarizes the correlations between PAQ scale scores and Brief Symptom Inventory scale scores. Each of these 40 correlations was significant at the .001 or .0001 level. These findings are rather startling in their consistency. However, without further analysis using the more objective, non-self-report measures, it remains unclear whether they indicate a very powerful relationship between psychological distress and problems with adaptation on each of the three dimensions or a more generic reporting style that endorses high levels of psychological and situational maladjustment and distress. If the scores do reflect these important relationships, Table 19 indicates generalized distress and problems, as opposed to differentiated relationships between specific types of distress and types of behavioral maladjustment.

Table 19

Correlation between Prison Adjustment Questionnaire Scale Scores and BSI Scale Means

	Anxiety	Depression	Hostility	Interpersonal Sensitivity	Obsessive - Compulsive	Paranoid Ideation	Phobic Anxiety	Psychoticism	Somatic	Global Severity Index
Internal	.24***	.23***	.17***	.21***	.22***	.23***	.17***	.21***	.15***	.24***
External	.26***	.24***	.51***	.25***	.26***	.33***	.14**	.25***	.16***	.30***
Physical	.35***	.34***	.24***	.32***	.33***	.30***	.23***	.31***	.34***	.41***
Global	.39***	.38***	.42***	.56***	.38***	.40***	.25***	.56***	.30***	.44***

\*\*p ≤ .01. \*\*\*p ≤ .001.

Table 20 offers the dimensional comparison of the three dimensions identified in the earlier research on male inmates with those indicated in the current sample.

Table 20

Prison Adjustment Questionnaire: Comparison of Factor Structure from Standardization (Men)  
with Factor Structure from Sample of Incarcerated Women

Factor-Derived Scales from Standardization Sample (Men)	Factor-Derived Scales from Female Inmate Sample
<i>External</i>	<i>External</i>
Arguments with Inmates	Arguments with Inmates
Arguments with Guards	Arguments with Guards
Fights	Fights
	Feeling Angry
<i>Internal</i>	<i>Internal</i>
Discomfort around Inmates	Discomfort around Inmates
Discomfort around Staff	Discomfort around Staff
Problems Sleeping	
Feeling Angry	
<i>Physical</i>	<i>Physical</i>
Being Injured or Hurt	Being Injured or Hurt
Being Sick	Being Sick
Fear of Being Attacked	Fear of Being Attacked
Fear of Being Taken Advantage Of	Fear of Being Taken Advantage Of
	Problems Sleeping

As indicated, there was considerable commonality between the External and Physical dimensions of adjustment, while the Internal subscale lost two items, one to the External subscale (feeling angry), and one to the Physical subscale (problems sleeping). Because the results from the female prison sample are also theoretically sound, for further analyses the items have been assigned to subscales according to this analysis. A Global prison adjustment score was derived from the mean of all items on the scale. Although adaptations were made to adjustment of items to scales, once assigned, the items were scored as indicated in Wright's manual.

Table 21 shows the frequencies for the nine items on the PAQ that assess how well the inmates feel the prison environment is currently meeting their needs, without regard to their experiences before incarceration.

Table 21 Frequencies of PAQ Items Assessing How Well Prison Environment Meets Inmates' Needs

Personal Need	Often or Always	Seldom or Never
Feel cell is home	155 (20)	618 (80)
Enough exercise	182 (24)	589 (76)
Enough sleep	322 (42)	450 (58)
Enough to eat	321 (42)	451 (58)
Enough to do	188 (24)	585 (76)
Enough privacy	118 (15)	654 (85)
Understand rules	678 (88)	94 (12)
Necessary training	(yes) 357 (48)	(no) 390 (52)
Have friends	(some or many) 589 (76)	(none) 185 (24)

The majority of the women reported understanding the rules and having friends, while close to half indicated that they were receiving the training they required for reintegration into society, were generally obtaining enough to eat, and appeared to be getting sufficient sleep. On the remaining questions, a majority of women reported that the need for exercise, activity, and privacy was not currently being met.

Table 22 summarizes the inmate's assessment of the relative difficulty of adjusting to prison in comparison to the community.

Table 22

Frequencies for Screening Variables "Worse in Prison"

Problem	Worse in Prison	Worse Outside, the Same or Not Endorsed as Problem
Uncomfortable around people	447 (58)	330 (42)
Problems sleeping	412 (53)	365 (47)
Feeling angry	294 (38)	483 (62)
Heated arguments	177 (23)	600 (77)
Fights	36 (5)	741 (95)
Being injured	48 (6)	729 (94)
Being sick	165 (21)	612 (79)
Fear of being attacked	179 (23)	598 (77)
Fear of being taken advantage of	189 (24)	588 (76)

Note. Values enclosed in parentheses represent percent of sample.

Feeling uncomfortable around people and problems sleeping were the only items for which a

majority of women reported the problem was worse in prison. For the majority of the women, feeling angry, getting into heated arguments, having fights, being injured, being sick, and fear of being taken advantage of were worse or the same when they lived in the free world or were not reported to be a significant problem for them while living in prison. Fewer than 10% of the women reported that fighting or being injured was worse since being incarcerated.

### *Factor Analyses*

Table 23 summarizes the factor loadings and reliability coefficient of a three-factor solution. The item content for the three scales generally paralleled that observed by Wright (1985) in his investigation of male inmates. However, two items were better accounted for by other factors in the present investigation with women. Feeling angry loaded on the External scale, and sleep problems failed to load on any factor. Feeling angry was a complex variable in the female sample; it had relatively high and similar loadings on all three factors. The Internal scale explained 31% of the total variance, the External scale explained 37%, and the Physical scale explained 25%. The Internal scale explained 81% of the common variance, the External scale explained 62%, and the Physical scale explained 55%.

Table 23

Factor Loadings and Internal Reliability for Wright's Male Derived Three Factor Solution

Problem	Internal	External	Physical
Uncomfortable Around Inmates	.79	.05	.12
Uncomfortable Around Staff	.75	.14	.00
Feeling Angry	.31	.37	.25
Heated Arguments With Inmates	.10	.77	.12
Heated Arguments With Guards	.07	.79	.06
Fights	-.03	.45	.05
Being Injured	-.03	.03	.39
Being Sick	.07	.07	.47
Fear of Being Attacked	.28	.06	.49
Fear of Being Taken Advantage Of	.25	.18	.43
Problems Sleeping	-.21	.03	-.10
Coefficient Alpha	.81	.62	.55

Upon further analyses, findings from the incarcerated female sample raised methodological concerns over applying the Wright (1985) method to the current female sample. First, both the Eigenvalues and the low internal reliability for the Physical scale suggested that a two-factor solution might be more parsimonious. Second, the scores on the items were not ordinal because the "0" category represented two possible responses: either that the problem did not currently occur, or that the problem was not worse in prison. Third, for most items, a majority of women did not report that their environment had worsened since incarceration. Wright (1985)

recommended scoring procedures that assign a zero score for such items, regardless of how frequently the item is rated as occurring during incarceration. Fourth, the frequencies in the female sample were heavily skewed, with several items resulting in a severely and positively skewed L-shaped distribution. Based on these findings, an alternative factor analysis was conducted using only the frequency with which problems are endorsed in prison, regardless of whether the women reported that the problem had worsened in prison. To lessen the impact of the heavily skewed distributions, a maximum likelihood method of factor analysis was utilized. Finally, an oblique rotation (Promax method) was used so that the factors were free to be correlated.

The first three Eigenvalues suggested a two-factor solution (3.9, 1.2, and .51, respectively). Table 24 shows the factor loadings and Cronbach's coefficient alpha for the two factors. All variables had sufficient loadings: this solution suggests a Conflict factor, which captures feeling angry, arguing, fighting, and being injured; and a Distress factor, which captures being uncomfortable around people, sleep problems, being sick, and fear of being attacked or taken advantage of. Being injured was a complex variable with moderate and similar loadings on both factors. The factors were substantially correlated ( $r = .42$ ).

Table 24

Factor Loadings and Internal Reliability for Warren et al. Female-Derived Two-Factor Solution

Problem	Distress	Conflict
Uncomfortable Around Inmates	.68	-.06
Uncomfortable Around Staff	.41	.21
Problems Sleeping	.56	-.05
Being Sick	.34	.09
Fear of Being Attacked	.58	-.04
Fear of Being Taken Advantage Of	.50	.06
Feeling Angry	.33	.46
Heated Arguments with Inmates	.06	.66
Heated Arguments with Guards	-.11	.78
Fights	-.03	.54
Being Injured	.25	.26
Coefficient Alpha	.69	.70

Based on the alternative two-factor analysis, for each inmate both a Distress scale score and a Conflict scale score were computed. A Distress scale score was computed from the mean of her scores on the variables loading on the Distress factor, and a Conflict scale score was computed from the mean of her scores on the variables loading on the Conflict factor. The mean for the Distress scale was 2.50 ( $SD = .77$ ). The distribution did not violate the assumptions of normality. The mean for the Conflict scale was 1.82 ( $SD = .61$ ). Although the distribution was positively skewed (skewness = .93), the option of transformation was rejected because of the large sample size and in favor of interpretability of results.

To assess concurrent validity of the Prison Adjustment Questionnaire (PAQ), scores on the alternative two-factor derived scales observed in the present study, Distress and Conflict, were evaluated for relationships with measures of psychological symptomatology (Brief Symptom Inventory Depression, Anxiety, Somatization, and Global Severity Index scales), self-report of perpetration of and victimization by aggressive behaviors during incarceration (physical assaults, threats, and sexual assault from the Prison Violence Inventory), and average counts per month of violent, nonviolent socially proscribed, and prison-rule based institutional misconduct. As indicated in Table 19, the prison adjustment scale scores demonstrated consistent relationships with the validating measures. Psychological symptomatology as measured by the Brief Symptom Inventory correlated significantly with both scales but demonstrated a trend in which the correlation coefficients were consistently higher for the Distress Scale, while perpetration of violence, counts of institutional misconduct, and security classification were more strongly related to the Conflict scale.

### *Predictive Analyses*

A series of standard multiple regressions was performed to assess which factors best predicted adjustment to the prison environment in the current population, using each of the adjustment scale scores, Distress and Conflict, as dependent variables. Due to the exploratory nature of the analyses, demographic and crime history variables that showed a significant correlation with the Distress or Conflict scale were entered into the two analyses. As summarized in Table 25, minority status, marital status, and prior incarcerations were entered into the analyses predicting

scores on the Distress scale; age, marital status, parental status, perpetration of a violent crime, sentence, and time served were entered into the multiple regression predicting scores on the Conflict scales.

Table 25

Regression Analyses for Variables Predicting Distress and Conflict Scales of the PAQ

Scale	Beta	F	t	Model R Squared
Distress		17.64		.06
Minority Status	-.230		-6.18***	
Marital Status	.070		1.95*	
Conflict		13.88		.13
Age	-.219		-5.24***	
Marital Status	-.084		-2.02*	
Violent Crime	.153		3.61***	
Time Served	.157		3.01***	

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

As further summarized in Table 25, the model for predicting scores on the Distress scale was significant ( $F(3, 724) = 17.636, p < .0001$ ) with an R squared of .064. Two independent variables, minority status and prior incarceration, contributed significantly to prediction.

Nonminority women and women who had experienced prior incarcerations were found to score higher on the Distress scale (Minority status: Beta = -.23, t(N = 727) = - 6. 18,  $p = .001$ ; Prior Incarceration: Beta = .07, t(N = 727) = 1.95,  $p = .05$ ).

Similarly, the model for predicting scores on the conflict scale was significant ( $F(6, 581) = 13.884, p < .0001$ ) with an R squared of .116. Four variables contributed significantly to prediction (Age: Beta = -.22,  $t(N = 587) = -5.24, p = .001$ ; Marital status: Beta = -.08,  $t(N = 587) = -2.02, p = .05$ ; Violent crime: Beta = .15,  $t(N = 587) = 3.61, p = .001$ ; Time Served: Beta = 1.57,  $t(N = 587) = 3.08, p = .01$ )

These exploratory analyses suggest that younger women score higher on the Conflict scales, as do women who have never been married. Higher scores were also predicted for women who had been convicted of a violent crime and for women who had served more time in prison.

The current study suggests that prison adjustment can be validly measured in a female population using the Prison Adjustment Questionnaire (PAQ). The PAQ correlated in a consistent and theoretically interpretable manner with validated measures of psychiatric distress, with self-report measures of violence perpetration and violence victimization, and with institutional counts of misconduct and security classification. The consistency of validation across psychological measures, self-report inventories, and institutional assessments suggests a consistent and multifaceted measurement of the behaviors and experiences associated with adjustment to a prison environment.

The dimensional structure of the measure, when used with a female population, is both similar to and different from that observed among male inmates. As summarized above, a two-factor solution fits the current data better than the three-factor solution reported by Wright (1985) when

validating the measure with male inmates. It initially appears that this difference derives from a more dichotomous split in the adjustment concept among women, a concept encompassing states of emotional distress and upset on the one hand and physical conflict and angry arguments on the other hand. A close inspection of the original Wright (1985) analyses, however, suggests the possible relevance of a two-factor solution for the male sample as well, making this structural comparison less distinct than it might originally appear. Interestingly, the two-factor distinction labeled Distress and Conflict in the current study reflects the two theoretical constructs that Wright (1985) originally sought to measure when developing the PAQ: emotional distress and physical aggression.

The scoring used in our two-factor analyses obviously diverges from the scoring regime developed by Wright (1985) for use with male inmates. His impetus for developing a measure that compared life experiences both before and after incarceration was to create a platform for distinguishing between personal maladjustment and the problems with physical, emotional, and interpersonal well-being that derived from living in a prison environment. This comparative framework assumed implicitly that male inmates who experienced greater problems with adjustment while living in the free world were a minority of the larger sample; the framework also made the implicit assumption that the significant degree of personal pathology and maladjustment in this group could be used to explain this counter-intuitive finding. The nature of the data reported by Wright (1985) does not allow for an explicit inquiry into these assumptions.

In the current study, however, it is abundantly clear that these assumptions do not apply. In this

sample, the majority of the women reported that they had worse problems with feeling angry, having heated arguments, getting involved in fights, being injured, getting sick, and fearing an attack when they were living in the free world than when they were living in prison. This finding has both sociological and methodological significance. Regarding the former, it is important for professional audiences to understand that many female inmates feel safer, calmer, and physically more secure in prison than they do in their lives in the outside world. This finding apparently quantifies the extent of the instability and chaos of the inmates' pre-incarceration lives rather than any degree of comfort afforded to them by the prison environment. Methodologically, this finding makes the scoring procedure used by Wright invalid. If his comparison scoring procedure was used to summarize the current data, it would inappropriately suppress and hide the problems with adjustment that our sample experiences in prison due to the unusually harsh nature of their lives prior to entry. Our approach separates the free world comparison from the degree of difficulty experienced during incarceration and therefore allows for a less constrained analysis of the problems these women do nonetheless experience in prison.

The exploratory analyses are of interest both because of the variables that are significant in the multiple regression analyses as well as because of those that are not. Contrary to the relatively consistent interest in the literature regarding the role that mothering plays in the adjustment of women to prison, our analyses suggested no relationship between parental status and adjustment to prison as measured by the PAQ when other factors such as age and marital status were entered into the analysis. This finding could result from the relative coarseness of the variable used in the current study. Recent research regarding the attachment-based parenting styles of incarcerated

women has found significant relationships between the degree of parental distress the women were experiencing and their prison adjustment (Houck & Loper, 2001).

Further, while incarceration for a violent crime and sentence length were predictive of scores on the Conflict scale of the PAQ, length of sentence was not. This finding is in contrast to earlier research by MacKenzie, Robinson, & Campbell (1989), which found that both length of sentence and time served were significant in determining adjustment patterns among incarcerated females. In contrast to previous research pertaining primarily to men, the amount of time served also demonstrated a positive correlation with the Conflict scale, suggesting that inmates who had spent longer periods of time in prison reported more problems with adjustment as it related to angry outbursts and heated arguments. This finding argues against the rather pervasive belief that adjustment improves over time for both male and female inmates.

The self-report nature of the PAQ also potentially limits its accuracy and applicability to some inquiries. Psychopathy research has highlighted the importance of blending self-report with file review in order to obtain the most accurate assessment of an inmate's personality and experience. However, recent research that used collateral interviews to study community violence among released inpatients also found that the added accuracy of the collateral reports was minimal and, in many ways, not worth the additional cost that was involved (Steadman et al., 1998). This observation coupled with the robust correlations observed in the current study between the PAQ scale scores and institutional misconduct and security classification suggests that the biases embedded in this type of data are not so extensive as to undermine its usefulness to both

correctional and mental health constituents.

*Goal 3: To explore the relationship of these psychiatric conditions and past experiences to the violence perpetrated by female inmates while in the prison and in the community.*

### *Sample Characteristics*

The subsample was comprised of 261 inmates who had been previously screened during the larger data collection effort involving the 802 inmates. The larger screening included a 45- to 60-minute small group administration of various instruments, including the Brief Symptom Inventory (BSI), the Barratt Impulsivity Scale (BIS), the Prison Adjustment Questionnaire (PAQ), and the Structured Clinical Interview for DSM-IV Personality Screening Questionnaires (SCID-II Screen). Women who agreed to participate in the study and those who did not were compared according to age, race, offense type, and length of sentence using data from institutional files. The research sample was slightly younger and had more counts of institutional misconduct but did not differ on the variables of race, violent criminal offending, sentence, or security classification.

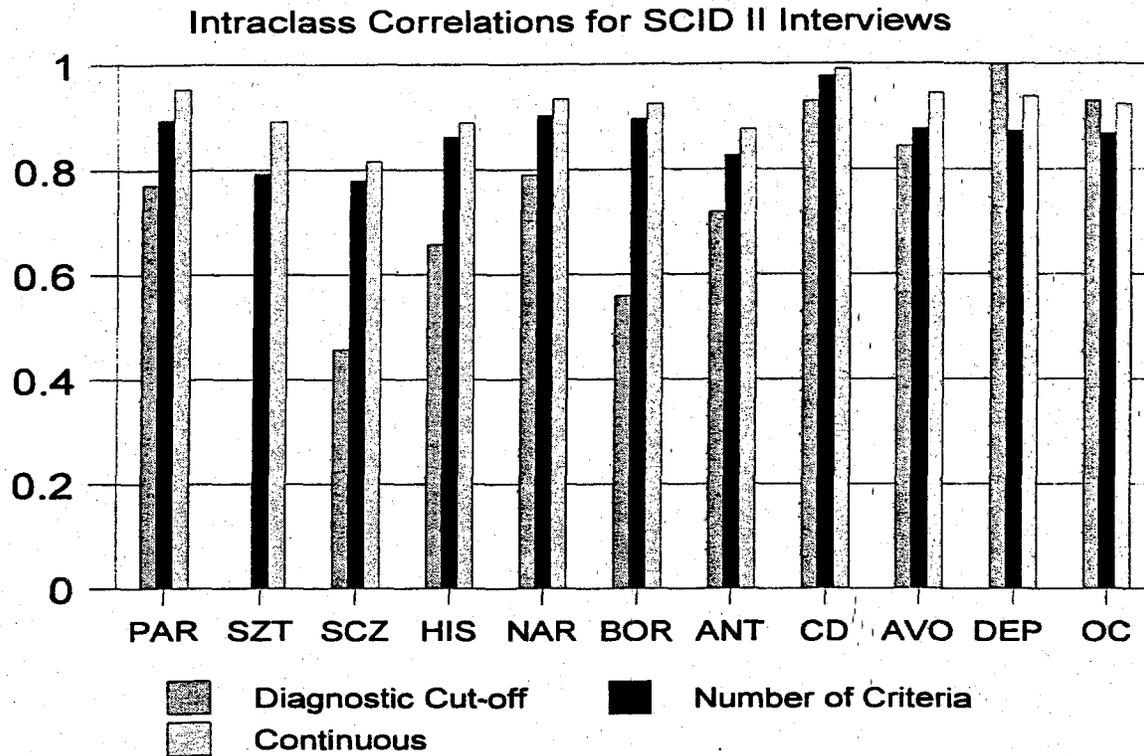
The SCID-II Screen provides a screening questionnaire with one question per DSM-IV personality diagnosis criterion, stated in lay terms to determine areas of personality pathology most relevant to the individual assessment. In the current study, the scores on the SCID-II Screen and Brief Symptom Inventory (BSI) were used to screen nonpsychotic women into an

experimental and/or control group. The experimental group was to include randomly chosen women who reported criteria sufficient on the SCID-II Screen to suggest a Cluster B personality disorder diagnosis: Antisocial, Borderline, Histrionic, or Narcissistic. The control group was designed to contain at least 50 nonpsychotic women who did not meet criteria for a Cluster B diagnoses.

The Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II), a semi-structured interview, was used for diagnosing the ten DSM-IV Personality Disorders. Training on the SCID-II involved a series of training sessions, mock interviews using the SCID-II Clinical Interview, and double coding of 10 inmate interviews by each interviewer. The presence of personality pathology was calculated using both a dichotomous and continuous score. The continuous scoring reflected the number of criteria met for each disorder, while the diagnostic cut-off followed the traditional DSM-IV diagnostic procedures. The reliability of the double coded interviews was excellent for the continuous rating (ICC's ranging from .77 to .98) and fair to good for the diagnostic scores (ICC's ranging from .45 to .93 excluding Schizotypal Personality Disorder, which occurred once and resulted in a minus ICC).

Figure 1

ICCs for Diagnostic Cut-off, Criteria Met, and Continuous Scoring



The final sample, based upon the earlier screening, resulted in a sample of 86 inmates who did not meet diagnostic criteria for any personality disorder, 132 inmates who met diagnostic criteria for Cluster B psychopathology either singularly or in combination with other diagnoses, and 42 inmates who met diagnostic criteria for either Cluster A or C psychopathology, either singularly or in combination with other non Cluster B diagnoses. The interviews took from one and a half to three hours to administer.

Table 26 summarizes the demographic characteristics of the women meeting diagnostic criteria for Cluster A, B, and C diagnoses. As summarized, inmates with children were more likely to meet diagnostic criteria for PD's in each of the three clusters, while women of minority status were more likely to meet criteria for one or more Cluster A or Cluster B diagnosis. High school graduates were less likely to receive a Cluster A diagnosis. Given the high base rate for Paranoid Personality Disorder in this sample (27%), further analysis is necessary to determine how this potentially situationally based criteria set is affecting these results.

Table 27 summarizes the SCID II Cluster diagnoses by crime characteristics. For all three Clusters, inmates meeting diagnostic criteria were less likely to have reported a period of prior incarceration. Similarly, across all three Clusters, those who met diagnostic criteria were more likely to serving sentences greater than five years. Those who met diagnostic criteria for the three Clusters were no more likely to have committed violent than nonviolent crime; however, they were less likely to have a drug crime as their most serious offense. This may be an artifact of having inmates with more lengthy sentences in the Stage Two subsample.

Table 26

SCID II Clusters by Demographics

	Cluster A	Cluster B	Cluster C
<b>Over Age 32</b>			
Yes	31 (42%)	53 (44%)	30 (46%)
No	42 (58%)	67 (56%)	35 (54%)
Total	73 (100%)	120 (100%)	65 (100%)
<b>Minority Status</b>			
Yes	61 (77%)	86 (68%)	40 (56%)
No	18 (23%)	40 (32%)	32 (44%)
Total	79 (100%)	126 (100%)	72 (100%)
<b>High School Grad</b>			
Yes	25 (32%)	55 (44%)	36 (51%)
No	53 (68%)	69 (56%)	35 (49%)
Total	78 (100%)	124 (100%)	71 (100%)
<b>Ever Married</b>			
Yes	31 (42%)	56 (46%)	37 (53%)
No	43 (58%)	66 (54%)	33 (47%)
Total	74 (100%)	122 (100%)	70 (100%)
<b>Children</b>			
Yes	63 (80%)	104 (83%)	58 (82%)
No	16 (20%)	22 (17%)	13 (18%)
Total	79 (100%)	126 (100%)	71 (100%)

Table 27

SCID II Clusters by Crime Characteristics

	Cluster A	Cluster B	Cluster C
<b>Prior Incarceration</b>			
Yes	23 (30%)	38 (31%)	20 (29%)
No	53 (70%)	85 (69%)	50 (71%)
Total	76 (100%)	123 (100%)	70 (100%)
<b>Sentence</b>			
< 5 years	25 (32%)	45 (35%)	28 (39%)
> 5 years	54 (68%)	83 (65%)	44 (61%)
Total	79 (100%)	128 (100%)	72 (100%)
<b>Violent Crime</b>			
Yes	39 (49%)	57 (45%)	32 (44%)
No	40 (51%)	71 (55%)	40 (56%)
Total	79 (100%)	128 (100%)	72 (100%)
<b>Drug Crime</b>			
Yes	18 (23%)	26 (20%)	8 (11%)
No	61 (77%)	102 (80%)	64 (89%)
Total	79 (100%)	128 (100%)	72 (100%)

Table 28 summarizes history of victimization by SCID II diagnostic Clusters.

Table 28

SCID II Clusters by Victimization

	Cluster A	Cluster B	Cluster C
<b>Sexual Assault Before Age 18</b>			
Yes	45 (58%)	78 (63%)	47 (66%)
No	33 (42%)	46 (37%)	24 (34%)
Total	78 (100%)	124 (100%)	71 (100%)
<b>Physical Assault Before Age 18</b>			
Yes	31 (40%)	59 (48%)	35 (49%)
No	47 (60%)	65 (52%)	36 (51%)
Total	78 (100%)	124 (100%)	71 (100%)
<b>Sexual Assault Last Six Months</b>			
Yes	7 (9%)	17 (14%)	10 (14%)
No	71 (91%)	107 (86%)	61 (86%)
Total	78 (100%)	124 (100%)	71 (100%)
<b>Physical Assault Last Six Months</b>			
Yes	13 (17%)	30 (24%)	16 (23%)
No	65 (83%)	94 (76%)	55 (77%)
Total	78 (100%)	124 (100%)	71 (100%)

63% of those meeting criteria for Cluster B and 66% of those meeting criteria for Cluster C report having experienced sexual assault before age 18.

Table 29

Percent of Sample Meeting SCID II Diagnostic Criteria and Diagnostic Comorbidity between 10 Personality Disorders (N = 261)

% Meeting Criteria	PAR	SZD	STP	ASP	BOR	HIS	NAR	AVO	DEP	OC
Paranoid 27	100	31	67	42	45	44	67	50	36	34
Schizoid 5	6	100	11	6	5	0	8	8	0	0
Schizotypal 4	9	8	100	5	10	11	8	3	9	5
Antisocial 43	69	54	56	100	76	78	79	64	36	46
Borderline 24	41	23	67	43	100	56	54	53	64	28
Histrionic 4	6	0	11	7	8	100	17	6	9	3
Narcissistic 10	24	15	22	18	22	44	100	11	9	8
Avoidant 14	26	23	11	21	30	22	17	100	55	13
Dependent 4	6	0	11	4	12	11	4	17	100	0
Obs-Compulsive 15	18	0	22	16	18	11	13	14	0	100

Note. Comorbidity percentages are organized by column. For example, of the people diagnosed with Paranoid PD, 6% were diagnosed with Schizoid PD and 9% were diagnosed with Schizotypal PD.

Table 29 summarizes the comorbidity that occurred within the sample of 261 inmates. As summarized, the most common diagnoses included Antisocial Personality Disorder (43%), Paranoid Personality Disorder (27%), and Borderline Personality Disorder (24%). The least common diagnoses included Schizoid Personality Disorder (5%), Dependent Personality Disorder (4%), and Schizotypal Personality Disorder. Table 30 also contains the percentage of inmates who also met criteria for the other ten personality disorder for each of the diagnoses. Consistent with past research, the diagnoses tend to overlap, showing patterns of comorbidity across the personality disorders. Comorbidity rates above 40% were demonstrated between Paranoid (69%), Schizoid (54%), Schizotypal (56%) and Antisocial Personality Disorder as well as between Schizotypal (67%), Paranoid (41%), Antisocial (43%) and Borderline Personality Disorder. Schizoid and Obsessive-Compulsive Personality Disorders showed the least degree of comorbidity in the current sample. The average number of diagnosable personality disorders per inmate was 1.46 (SD = 1.47).

#### *Pertinent Literature Related to Violence and Personality Disorders*

Embedded in this study of personality disorders among prison inmates is an emergent interest in the relationship between personality disorders and violent or criminal behavior. A study of 1,740 male and female patients committed to two British hospitals for dangerous, violent, or criminal behavior over a six-month period found that 58% of these patients were suffering from functional psychoses, with one-quarter having an independent personality disorder, 26% having a personality disorder uncomplicated by psychosis, and 16% having a primary diagnosis of

learning disabilities (Taylor, Leese, Williams, Butwell, Daly, & Larkin, 1998). Of the 119 individuals who suffered from a personality disorder only, 26% had been admitted for homicide, 40% for other violent acts, 15% for sex offending, and 18% for arson. A longitudinal study of 717 youth further found that adolescents with symptoms of DSM-IV Cluster A and B personality disorders were more likely than other adolescents in the community to commit violent acts during adolescence, including arson, assault, breaking and entering, initiating physical fights, robbery, and threatening to injure others (Johnson, Cohem, Smailes, Kasen, Oldham Skodol & Brooks, 2000). These results were found to remain significant after controlling for the youths' age, gender, socioeconomic status, degree of parental pathology and co-occurring psychiatric disorders. Cross-sectional studies of substance abusers (Poling, Rounsaville, Ball, Tennen, Kranzler, & Triffleman, 1999) and spouse abusers (Hart, Dutton, & Newlove, 1993) demonstrate similarly high rates of personality disorders among these groups.

Focusing on issues of comorbidity and violence, Coid (1992) studied personality disorders among 243 male and female violent offenders. He found borderline, antisocial, and narcissistic diagnoses to be the most common; the mean number of diagnoses per offender was 3.6 with only 5% of the sample meeting criteria for a single disorder. Blackburn and Coid (1998) examined the clustering of personality disorders that characterized 164 incarcerated violent male offenders. Using cluster analytic techniques, they identified six diagnostic patterns: antisocial-narcissistic; paranoid-antisocial; borderline-antisocial-passive-aggressive; borderline; compulsive-borderline; and schizoid. Based on these findings, they conclude that violent offenders are heterogeneous in their personality pathology and that the personality disorders discovered are best conceptualized

as recurring patterns of co-varying traits rather than comorbid singular diagnostic categories.

*Descriptive Statistics*

Table 30 summarizes the demographic and crime history characteristics of the 261 women by the three violence measures (violent including murder, violent not including murder, and nonviolent) and their Cluster A, B, or C diagnoses.

Table 30

Demographic Characteristics and Crime History Information

Inmate Characteristics	Criminal Convictions			Personality Cluster		
	Violent/ Murder (n = 126) %	Violent Other (n = 96) %	Nonviolent (n = 125) %	A (n = 79) %	B (n=132) %	C (n = 75) %
<b>Age</b>						
Under 32	61***	65 ***	37***	58	56*	54
Over 32	39	35	63	42	44	46
<b>Race</b>						
Minority	70	72	61	77**	68	56*
Nonminority	29	28	39	23	32	44
<b>Time Served</b>						
< 5 years	19***	22***	52***	32	35	39
> 5 Years	81	78	48	68	65	61

A file review was also conducted for each inmate to ascertain the number of institutional infractions with which they had been charged over the past year. This measure was calculated as a frequency per month in order to control for time spent in the institution. A violence infraction score, comprised of only infractions that involved some type of threatening or violent behavior, was created using the institution's criteria for rule violations.

### *Predictive Analyses*

A series of multivariate analyses was run predicting the various violence and criminality measures from both the broad personality disorder clusters and individual diagnoses within Cluster B. The dichotomous measure of whether or not diagnostic criteria had been met was used as the independent variable in these analyses accompanied by age, race, and time served when indicated. Logistic regression was used in predicting the categorical violence and criminality measures and multiple regression in predicting the continuous violence and criminality measures. These results are summarized in Table 32.

A diagnosis of at least one Cluster A personality disorder significantly predicted the following *categorical* dependent variables: current convictions of any violent crime including homicide ( $B=.46 (.16)$ ,  $p<.01$ ,  $OR=2.50$ ), past convictions of violent crimes excluding homicide ( $B=.47 (.15)$ ,  $p<.01$ ,  $OR=2.49$ ), and current conviction for prostitution ( $B=.92 (.35)$ ,  $p<.01$ ,  $OR = 6.35$ ). The diagnoses of at least one Cluster A disorder significantly predicted the following *continuous* dependent variables: summed measure of self-reported violence ( $R^2 = .15$ , model  $p < .0001$ ) and

level two institutional infractions ( $R^2 = .17$ , model  $p < .0001$ ).

Table 31

Logistic Regression Summary for Personality Disorder Clusters and Individual Cluster B

Diagnoses Predicting Categorical Violence and Criminality Variables

Variable	B	SD	P	Odds Ratio
<i>Cluster A</i>				
Current Convictions of Violence Crime with Homicide	0.46	0.16	0.004	2.50
Current Convictions of Violent Crime without Homicide	0.46	0.15	0.003	2.49
Current Conviction for Prostitution	0.92	0.35	0.008	6.35
<i>Cluster B</i>				
Self-Report Institutional Violence/Categorical	0.59	0.17	0.001	3.26
<i>Narcissistic PD</i>				
Current Convictions of Violence Crime with Homicide	1.01	0.33	0.002	7.57
Current Convictions of Violent Crime without Homicide	0.80	0.26	0.002	4.92
<i>Antisocial PD</i>				
Self-Report Institutional Violence/Categorical	0.58	0.17	0.001	3.18
<i>Borderline PD</i>				
Self-Report Institutional Violence/Categorical	0.53	0.18	0.004	2.88
<i>Cluster C</i>				
Current Convictions of Drug Crime	-0.37	0.17	0.027	0.48
Current Convictions of Regulatory Crime	0.34	0.17	0.050	1.96

A diagnosis of at least one Cluster B personality disorder significantly predicted whether or not there was self-reported violence within the institution ( $B=.59$  (.17),  $p < .001$ , OR 3.26). A diagnosis of at least one Cluster B personality disorder also significantly predicted the

cumulative total of different types of self-reported violence within the institution ( $R^2 = .17$ , model  $p < .0001$ ).

Analyses on the individual Cluster B diagnoses yielded a different pattern of results. Narcissistic Personality Disorder significantly predicted current incarceration for any violent crime including homicide ( $B = 1.0 (.33)$ ,  $p < .01$ ,  $OR = 7.57$ ) and current incarceration for any violent crime not including homicide ( $B = .80 (.26)$ ,  $p < .01$ ,  $OR = 4.92$ ). Narcissistic Personality Disorder also significantly predicted the cumulative total of different types of self-reported violence within the institution ( $R^2 = .16$ ,  $p < .0001$ ) and level two institutional infractions ( $R^2 = .15$ ,  $p < .0001$ ). A diagnosis of Antisocial Personality Disorder significantly predicted whether there was any self-report of institutional violence ( $B = .53 (.16)$ ,  $p < .01$ ,  $OR = 3.18$ ), also predicting the cumulative total of different types of self-reported violence within the institution ( $R^2 = .18$ ,  $p < .0001$ ) as well as level one institutional infractions ( $R^2 = .04$ ,  $p < .01$ ). Borderline Personality Disorder was predictive of the same dependent variables: whether there was any self-report of institutional violence ( $B = .53 (.18)$ ,  $p < .01$ ,  $OR = 1.15$ ), the cumulative total of different types of self-reported violence within the institution ( $R^2 = .16$ ,  $p < .0001$ ), and level one institutional infractions ( $R^2 = .04$ ,  $p < .05$ ). Histrionic Personality Disorder was not related to any of the violence or criminality measures.

Cluster C diagnoses were significantly predictive of not having been incarcerated for a drug crime ( $B = -.37 (.17)$ ,  $p < .05$ ,  $OR = .48$ ) and of having been incarcerated for regulatory crimes including perjury ( $B = -.34 (.17)$ ,  $p < .05$ ,  $OR = 1.96$ ). It also significantly predicted the number

of level two institutional infractions per month ( $R^2 = .15, p < .0001$ )

The findings summarized above are significant to policy debates regarding the perpetration of violence and criminality by women as well as to the assessment and investigation of the structure of personality disorders within this particular population. They clearly highlight the elevated prevalence of personality disorders among the women incarcerated in this particular maximum security prison. Out of a combined sample of 261 women, 67% were found to meet criteria for at least one personality disorder, 51% for one of the four Cluster B diagnoses, and 16% for the Cluster A and C personality disorders, proportions that far exceed those found in community samples (Robbins, Monahan, & Silver, 2001). The symptoms of these chronic and persistent disorders, including tumultuous relationships, impulsivity, recklessness, susceptibility to substance use and abuse on the Cluster B continuum, as well as the suspiciousness, social awkwardness, and overly dependent attitudes and behaviors that characterize the Cluster A and C continua, have all preceded incarceration and inevitably have contributed to the behavior or the series of behaviors that coalesced into these legal outcomes or sanctions.

These findings suggest that the women who are currently incarcerated in prisons suffer from more extensive and diverse types of psychopathology than is suggested by studies that focus only on the acute forms of mental illness. It also highlights the societal cost that accrues from our current impasse regarding effective ways of either minimizing the development of these less obvious forms of psychiatric impairment or treating them once they have crystallized into long-term forms of maladaptive functioning. Obviously, the expense and human suffering that

accompanies these disorders, at least among this particular population, argues for more sustained study of the origins and etiologies that characterize the development of these disorders.

As in other studies, Antisocial Personality Disorder (43%) and Borderline Personality Disorder (24%) were the most common diagnoses, although in the current study Paranoid Personality Disorder was also diagnosed in 27% of the women interviewed. Further examination demonstrated that the diagnosis of Paranoid Personality Disorder co-varied with all the ten personality disorders, creating problems of definition in this correctional population, as it was routinely reported that a wary approach to all interpersonal interactions, both with other inmates and with correctional officers, was requisite for survival in this particular environment. Further research was subsequently undertaken to differentiate the institutional onset of these perceptions and behaviors from those that were chronic in nature. This research found that differences in situational and trait paranoia could be identified in the current population (Carter, 2001).

Each of the Cluster B Disorders reflected high degrees of comorbidity with each other as well as with other personality disorder diagnoses. As summarized in Table 30, Antisocial and Borderline Personality Disorder had a high degree of comorbidity, with 43% of the 261 women meeting diagnostic criteria for both disorders. Women suffering from Antisocial and Borderline Personality Disorder either individually or combined also demonstrated a higher degree of comorbidity with the Cluster A disorders than the Cluster C disorders. These findings are similar to those reported by Blackburn and Coid (11), who found among violent male offenders recurring patterns of co-varying traits rather than single diagnoses as contemplated by the DSM

classification. The current finding also suggest that the combination of traits such as the rule-breaking and volatile behavior of the Antisocial and Borderline Personality disorders combined with the distorted and odd perceptions of the Paranoid and Schizotypal disorders may put women at particularly high risk for breaking the law and doing poorly in their attempts to navigate successfully through the criminal justice process.

The Cluster B Personality Disorders, taken as a group, were not predictive of violent criminal behavior outside of the institution nor violent institutional infractions as identified or recorded by prison officials. The combined Cluster B disorders were predictive only of self-reported violence within the institution. These results seems to suggest that women suffering from Antisocial Personality Disorder, the most common of the Cluster B diagnoses in the current sample, are diffuse and generic in their offending behavior and perpetrate a variety of crimes rather than focusing their illegal activities on specific crime categories. This type of offending pattern is similar to that observed among males with the same diagnosis, and the contrast between generic and specific patterns of criminality will be explored further in subsequent research that will compare antisocial personality diagnoses and psychopathy among this group of female felons. Conversely, the higher rate of self-reported violent behaviors within the institution by women meeting diagnostic criteria for Antisocial Personality Disorder appears to be multi-determined; it also appears to include either a propensity for these women to be involved in interpersonally threatening behavior in such a way as to avoid official notice and sanction or a propensity for women with Antisocial Personality Disorder to exaggerate and embellish their predatory and exploitative tendencies.

In marked contrast to this lack of a predictive relationship between general Cluster B personality pathology in general and violent crime, Narcissistic Personality Disorder predicted current incarceration for any violent crime, including murder, and any violent crime, excluding murder, with odds ratios of 7.57 and 4.92 respectively. Unlike the other Cluster B diagnoses, these results suggest a powerful relationship between this particular personality disorder and violent behavior among incarcerated women. Narcissistic Personality Disorder was diagnosed in 10% of the sample, with rates of comorbidity ranging from 4% (Dependent Personality Disorder) to 44% (Histrionic Personality Disorder). These results suggest that the entitlement, grandiosity, interpersonal exploitativeness, lack of empathy, and envy that characterize this disorder may also be correlates of violent behavior among certain women. This symptom picture, historically referred to as "malignant narcissism," will be explored further as it relates to the construct of psychopathy among female prisoners.

Unexpectedly, a significant predictive relationship was found between Cluster A personality disorders and violent behavior. This relationship held for all violent offenses, including and not including homicide, with odds ratios of 2.50 and 2.49. These results suggest that the suspicious attitudes, bizarre forms of thinking, and social isolation associated with the Cluster A personality disorders may be linked to the more extreme types of violence perpetrated by women. Recently, Monahan et al. (2001), using the MacArthur violence risk data, failed to confirm the earlier robust relationship between threat-control-override delusions and violence, leading these researchers to speculate that it was a generally suspicious attitude to others rather than the delusional structure *per se* that increased the level of risk for violent behavior. The findings from

the current study similarly suggest that suspiciousness and odd beliefs are highly relevant to risk assessment for violence among women, superseding the reckless and tumultuous behavior more commonly associated with personality disorders among female offenders.

The results of the current study further indicate a powerful relationship between Cluster A personality disorders and prostitution (odds ratio = 6.35). This finding suggests that psychiatric impairment may be intrinsic to but unobserved among this particular population of female offenders, contradicting the common stereotype of prostitution being an antisocial form of activity based upon immoral acts. It also suggests that social isolation may predispose certain women to this kind of anonymous sexual activity and/or make the more regulated and routinized interpersonal environment of many workplaces uncomfortable and distressing.

Taken as a whole, these findings highlight the relevance of personality disorders to understanding the criminality and violence perpetrated by women and to predicting violent behavior among women. This relationship undoubtedly encompasses genetic, neurobiological, psychodynamic, and developmental factors that could inform further study into these less evident forms of psychopathology, while helping to determine interventions earlier in life which might ameliorate some of their deleterious impact. The high rates of comorbidity reflected within this sample among the Cluster B disorders also demonstrates the need for further analyses of these data regarding the underlying structure and components of these dramatic, emotional and erratic disorders, particularly given their high cost in terms of personal suffering and destructive societal costs.

## *Psychopathy in Women*

Inmates who had been administered the SCID-II interview were contacted some months later and asked to participate in a second interview that included coding on the PCL-R and the HCR:20. Extensive training was conducted with the interviewer on the use of the PCL-R and the HCR:20, with each coder coding eight taped interviews and double coding an additional five interviews at the prison. In line with administration requirements for both the PCL-R and the HCR:20, each interviewer reviewed a comprehensive file summary that was compiled by other members of the research team prior to each interview. The file reviews and interviews took from three to six hours to complete per inmate.

## *Literature Pertaining to the Psychopathy Construct*

The concept of psychopathy has historical roots dating back to the writing of Philip Pinel, who described in 1803 a pathological condition of the emotions referred to as “*mania sans delire*.” It was characterized by emotional lability and social drift, originating in what was then referred to as a disorder of the emotions. Over the next two hundred years, the same condition was given alternative names by French, English and German writers: “moral insanity” (Prichard, 1835), “*delinquente nato*” (Lombroso, 1876), “psychopathic inferiority” (Koch, 1891), “psychopathic personalities” (Kraepelin, 1904), “sociopathy” (Partridge, 1930), and “semantic dementia” (Cleckley, 1941). Schneider (1923) sought to develop a value-free taxonomy of personality disorders, distinguishing two types of psychopathic individuals: those who suffer from their

psychic abnormality and those from whom society suffers (Herpertz & Sass, 2000).

Since that time, the etiology of this and other personality disorders has been explored from a variety of perspectives, and a common consensus that recognizes an interaction of influential factors has developed. Such influences include genetic predispositions (Gottesman, 2001), biological deficits (Dolan, 1999; Raine et al., 1994), developmental factors (Cloninger, Reich and Guze, 1975; Marshall and Cooke, 1999), and situational conditions (Loeber & Stouthamer-Loeber, 1986). The predictive and structural integrity of the construct has also attracted vigorous research attention since the creation of the Psychopathy Checklist (PCL) by Hare in 1980, the Psychopathy Checklist-Revised in 1991, and the Psychopathy Checklist: Screening Version (PCL-R: SV) by Hart in 1995. Using these instruments in a variety of institutional and community contexts, researchers began to discover the construct's robust potential in predicting re-offense rates (Hare, McPherson & Forth, 1988); institutional adjustment (Gacono, Meloy, Sheppard, Speth, & Roske, 1995); treatment response (Ogloff, Wong & Greenwood, 1990; Rice, Harris, & Cormier, 1992); and community violence among prisoners (Hare & McPherson, 1988), forensic patients (Rice & Harris, 1997), and civilly committed psychiatric patients (Douglas, Ogloff, Nicholls, & Grant, 1999; Monahan, 2001). The remarkable consistency of the findings resulted in an enthusiastic response by professionals involved in risk assessments for violence, institutional security, and community management within both the psychiatric and correctional communities.

Attempts to empirically define and describe psychopathy's underlying structure has initiated a

vigorous ongoing debate regarding a two-factor explanation of the construct made up of “emotional detachment” and “antisocial behavior.” (Pilkonis & Klein, 1997; Widiger et al., 1996). Monahan’s (2001) recently published research summarizing risk for violence among recently released civilly committed psychiatric patients found that scores on the “antisocial behavior” factor predicted violence better than scores on the “emotional detachment” factor, and did so even when 15 covariates were entered into the predictive equation, including criminal and violence history, substance abuse and diagnoses, other personality disorders, anger, and demographic characteristics. Recent work in Scotland by Cooke and Michie (2001) using eight Canadian and two American samples with a total sample size of 2067 participants found no confirmation for the two-factor solution (Harpur, Hare, Hakstian; 1988), suggesting instead a three-factor solution that included Arrogant and Deceitful Interpersonal Style, Deficient Affective Experience, and Impulsive and Irresponsible Behavioral Style.

Related but distinct from the questions regarding the underlying structure of the concept are the debates and inquiries concerning the affective correlates of this condition. This type of inquiry emerged initially from Cleckley’s (1941) early description of psychopathy, which identified four emotional characteristics of the psychopath’s experience, including a lack of nervousness, diminished affective experiences, a lack of remorse or guilt, and an incapacity to form deep affective bonds. As summarized above, inquiry into the factor structure of the PCL-R construct has also identified a dimension referred to either as “emotional detachment” or “deficient affective experience.” Subsequent research has suggested that the psychopath’s inability to experience fear and anxiety (Lykken, 1957; Fowles, 1980; Gray, 1975) contribute to the under-

arousal that has been etiologically linked to the origins of the disorder. This assertion has derived primarily from physiological studies using autonomic measures of the psychopath's response to aversive stimuli (Blankenstein, 1969; Hare, 1972; Hinton & O'Neil, 1976; Patrick, Cuthbert, & Lang, 1994). It has also been influenced by descriptions of the psychopath as being overly sensitive to criticism and quick to anger (Yochelson & Samenow, 1976; Meloy, 1988; Sterling & Edelman, 1988; Serin, 1991), although recent research suggests that psychopathic individuals may experience anger in similar ways as nonpsychopaths but be less overt in its expression (Patterson, 1991; Forth, 1992; Steuerwald, 1996). Meloy's (1988) psychodynamic description of the condition contends that psychopaths are unable to experience depression due to the primitive nature of their intrapsychic personality structure.

One aspect of the psychopathy construct that has received limited attention involves gender differences observed among males and females in terms of the underlying structure of the construct, relevant cut-off scores, and associated traits and behaviors. The research that has been conducted has been limited to noncriminal (Forth, Brown, Hart, & Hare, 1996; Forth, Kisslinger, Brown & Harris, 1993) or substance-abusing samples (Cooney, Kadden & Litt, 1990; Rutherford, Cacciola, Alterman & McKay, 1996), with the majority of the research finding addicted women scoring in the nonpsychopathic range. The research involving female prisoners is limited. Currently, five studies have examined the base rates of psychopathy among various incarcerated samples (Neary, 1990; Louks 1995; Salekin et al., 1997; Tien et al., 1993 & Strachan, 1993), with these rates varying from 11 to 31, a finding that Vitale & Newman suggest is broadly comparable to that found among men given the anticipated gender biases contained in

the current item scales of the PCL-R.

Salekin, Rogers, & Sewell (1997) examined the construct of psychopathy among a sample of 103 detained female offenders in a local jail. Using three measures of antisocial personality, the PCL-R, Personality Assessment Inventory (PAI) and the Personality Disorder Examination (PDE), they found different rates of morbidity based upon the instrument used. Based upon the PCL-R, only 16% of the women were above the cut-off score for psychopathy, although 33% were elevated on the criteria for antisocial personality contained within the other two measures. As part of the study, the correctional officers at the jail were asked to assess each inmate on six Likert type scales including violent behavior, verbal aggressiveness, noncompliant behavior, remorse, manipulateness, and overall dangerousness. Scores on the psychopathy checklist did not correlate with higher staff ratings of aggressive and disruptive behavior within the institution, although the PAI Aggression Scale was highly related to the diagnoses of Antisocial Personality Disorder derived from the Personality Disorder Examination (PDE).

As part of this study, Salekin et al. conducted an exploratory factor analysis of the data to explore the two-factor structure (Harpur, Hare & Hakstian, 1989; Cooke, 1995; Kosson et al., 1990; Hobson & Shine, 1998) that is comprised of interpersonal traits and deviant behavior. While they found that the two factors identified in their female sample were somewhat similar to the two factors previously described in male samples, three items cross-loaded on the two factors: poor behavioral controls, impulsivity, and lack of realistic long-term goals. Three items failed to load on any factor: failure to accept responsibility, many short-term marital relationships, and

revocation of conditional release. An additional two factors were found to load on the behavioral factor: promiscuous sexual behavior and lack of realistic long-term goals. These findings led Salekin et al. to suggest that the two-factor model reported by numerous researchers may not be applicable to women, although the relatively small size of the sample limits the interpretability of these findings.

In a subsequent study, Salekin, Rogers, Ustad and Sewell (1998) tracked 78 members of their earlier sample in terms of recidivism for a minimum of 12 months using the jail's computer system, which tracked arrest, detention, and incarceration for offenders throughout the state of Texas. They found an overall recidivism rate of 41%, and the Antisocial Scale of the Personality Assessment Inventory (PAI), Factor 1 of the PCL-R, and the ANT-E scale of the PAI were found to correlate significantly with rates of recidivism among this particular sample. When using the PCL-R to predict recidivism, they found sensitivity of .11, specificity of .91, PPP of .50, and NPP of .55. Based upon further analyses using Receiver Operating Characteristics Curves (ROC) and survival analyses, the authors conclude that the predictive potential of the PAL-R among this particular sample was "less than impressive."

### *Descriptive Statistics*

The PCL-R sample is summarized in Table 32. As indicated, the PCL-R sample currently contains 119 subjects, although it will contain 130 subjects upon completion of data entry. As outlined in Table 32, the female inmates in this sample obtained a mean score of 22.4 on the

PCL-R with a SD of 7.5. This suggests that the majority of women scored between 15 and 30 on the instrument, scores in both ranges that are significant and that, on the higher end, approximate the cut-off score of 30 used with men.

Table 32

Demographic and Crime Characteristics of PCL-R Sample (N = 119)

	Frequency*	Percent
<b>Age</b>		
Under Age 32	68	63
Over Age 32	40	37
<b>Race/Ethnicity</b>		
Minority	75	65.8
Nonminority	39	34.2
<b>High School Education</b>		
Yes	51	45.5
No	61	54.5
<b>Ever Married**</b>		
Yes	52	46.9
No	59	53.1
<b>Length of Sentence</b>		
Under 5 Years	27	23.3
Over 5 Years	89	76.7
<b>Time Served</b>		
Under 1 year	13	11.4
Over 1 year	101	88.6
<b>Prior Incarceration</b>		
Yes	37	33.0
No	75	67

\* Total n varies because of missing data

\*\* Women who selected "Common Law Marriage" were included in having been married.

Table 33

PCL-R Total and Two-Factor Scores

Individual PCL-R Items-Summary Information (N = 119)				
Variable	0 (%)	1 (%)	2 (%)	Omit (%)
Glibness	36.13	29.41	34.45	
Grandiose	36.13	30.25	33.61	
Boredom	19.33	24.37	56.30	
Lying	11.76	37.82	50.42	
Conning	9.24	33.61	57.14	
No Guilt	23.53	33.61	42.86	
Shallow Affect	46.22	31.93	21.85	
Callous	26.05	35.29	38.66	
Parasitic	21.01	51.26	27.73	
Behavior Control	17.65	22.69	59.66	
Promiscuous	29.41	24.37	46.22	
Early Behavior	51.26	22.69	26.05	
Long-Term Goals	26.05	41.18	32.77	
Impulsive	11.76	26.89	61.34	
Irresponsible	5.88	26.05	68.07	
Fail Responsibility	19.33	42.86	37.82	
Marital Relationship	67.23	16.81	15.97	
Delinquency	62.18	20.17	17.65	
Revocation	17.65	3.36	53.78	25.21
Versatility	34.45	33.61	31.98	
Factor Score Summary Information (N=119)				
	Mean	SD		
Factor 1	9.08	4.00		
Factor 2	10.70	3.99		
Total	22.41	7.45		

As summarized in Table 33, scores of 2 on the PCL-R were obtained most frequently on the Boredom, Lying, Conning, Lack of Behavioral Control, Impulsivity, Irresponsibility, and Revocation of Conditional release items. Factor scores on the Emotional Detachment Factor and the Antisocial Behavior Factor were 9.1 and 10.7, respectively. Further analyses to explore alternative factor models and to examine the potential of both factors in predicting violence and institutional behavior are underway.

## *CONCLUSIONS*

The results of the current study are complex and multi-faceted and to a large extent have been addressed under the different major areas of analysis. Taken from the perspective of a broad overview they do, however, highlight the following themes or observations:

- Female inmates manifest high levels of self-reported psychiatric distress comparable in many respects to that reported among inpatient psychiatric populations.
- The levels of victimization reported by these women is very high, with 55% of the women reporting sexual abuse before the age of 18 years and 39% physical abuse before the age of 18.
- Rates of victimization correlate very strongly with self-reported psychiatric distress.
- Institutional violence correlated significantly with younger age, minority status,

Brief Symptom Inventory Global Severity Index, Cluster B psychopathology, and early sexual abuse and was predicted in a logistic regression by age and in a positive screen for Antisocial Personality Disorder.

- Prison adjustment appeared to be measured adequately by the Prison Adjustment Questionnaire (PAQ) developed by Wright for use with male prisoners, although a two-factor rather than three-factor model best reflected the underlying structure of the construct among the female sample.
- On the PAQ, feeling uncomfortable around people and problems sleeping were the only two (of 11) items on which the inmates reported that they had more problems in prison than when living in the community.
- Nonminority status and prior incarceration significantly predicted scores on the Distress Factor of the PAQ; younger age, being unmarried, being incarcerated for a violent crime, and longer time served significantly predicted scores on the Conflict Factor.
- 67% of the Stage Two sample (N = 261) were found to be suffering from one or more personality disorders.
- There were high rates of comorbidity on the diagnoses, particularly among inmates diagnosed with Antisocial Personality Disorder (43%), Paranoid Personality Disorder (27%), and Borderline Personality Disorder (24%).
- Cluster A diagnoses predicted current conviction for homicide and other violent crimes and incarceration for prostitution.
- Narcissistic Personality Disorder was a powerful predictor of incarceration for

murder.

- Antisocial Personality Disorder predicted higher rates of self-reported institutional violence.
- Cluster C diagnoses predicted current incarcerations for drug crimes and regulatory crimes.
- The inmates who were administered the PCL-R interview obtained a mean score of 22 on the instrument, this being a score that is only moderately below the 30 cut-off score for psychopathy in men.
- Scores of 2 (maximum) were obtained most frequently on the Boredom, Lying, Conning, Lack of Behavioral Control, Impulsivity, Irresponsibility, and Revocation of Conditional release items of the PCL-R.
- PCL-R Scores on the Emotional Detachment Factor and the Antisocial Behavior Factor were 9.1 and 10.7 respectively, suggesting the potential salience of both dimensions of the construct.

Taken as a whole, these data underscore the pervasive rates of psychiatric distress, victimization, and personality disorders that characterize a female prison population. The impact of these conditions and experiences are obvious both in terms of their personal costs as well as the cost that accrues to society. While it is impossible to separate cause from effect once the woman has reached the impasse of incarceration, it is clear that the majority of women have been experiencing victimizing and harsh life circumstances for many years, that the symptoms of their pervasive types of personality disorders have likely been apparent since adolescence, and that the

same influences that cause their personal suffering also contribute in a powerful manner to the patterns of criminality and violence that plague our society. The finding that many of the women find their life adaptation easier in prison than in the community further underscores the progressive trajectories that contribute to this tragic and costly outcome.

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