

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

**A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600**

**UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE**

**AN EXPLORATORY ANALYSIS OF RISK FACTORS
FOR CRIMINAL VIOLENCE BY WOMEN**

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

Doctor of Philosophy

By

**Sharon LaMoyne Kerr
Norman, Oklahoma
1998**

UMI Number: 9839806

UMI Microform 9839806
Copyright 1998, by UMI Company. All rights reserved.

**This microform edition is protected against unauthorized
copying under Title 17, United States Code.**

UMI
300 North Zeeb Road
Ann Arbor, MI 48103

**UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE**

**AN EXPLORATORY ANALYSIS OF RISK FACTORS
FOR CRIMINAL VIOLENCE BY WOMEN**

A Dissertation

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

Doctor of Philosophy

By

**Sharon LaMoyne Kerr
Norman, Oklahoma
1998**

UMI Number: 9839806

UMI Microform 9839806
Copyright 1998, by UMI Company. All rights reserved.

**This microform edition is protected against unauthorized
copying under Title 17, United States Code.**

UMI
300 North Zeeb Road
Ann Arbor, MI 48103

**c Copyright by SHARON LAMOYNE KERR 1998
All Rights Reserved**

**A Dissertation APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY**

Jody Glenn
 Barb Ryan
 Linda Schum
 Larry E. Fotherman

Acknowledgements

Several individuals made notable contributions to this dissertation project.

I am grateful to Jody Newman for leading my dissertation committee, for her high standards of research, and for her patience as I struggled towards completion. Betty Pfefferbaum and Sara Nixon provided abundant help in the gathering and analyzing of the data. Sara and her colleagues at the lab provided considerable support by allowing me free use of their laboratory. I especially appreciate Sara's expertise and humor. Mary Phillips generously allowed me to use her work space and her computer. Alfretria Scarborough worked with me on data collection and entry. Larry Toothaker and Rick Tivis provided valuable consultation and assistance with data analysis. Doris Chediak was an invaluable mentor and guide, helping me to clarify processes and products. Finally, I wish to thank Cal Stoltenberg and Avi Scherman for their guidance, constructive feedback, and valuable time. Cal actively assisted me over several hurdles.

I am deeply grateful for the support of my entire family (too numerous to name here). Without exception, each encouraged and goaded me along each step of the way. Special sacrifices were made by my daughter and parents. Thanks Mom, Dad, and Lou for your constant support. Thanks, Katie, for providing the fire. You are my sunshine and my starshine.

Table of Contents

List of Tables	.....	vi
Abstract	.....	vii
Introduction	.....	1
Research Question	.....	26
Method	.....	27
Participants	.....	27
Instruments	.....	28
Data Analysis	.....	42
Results	.....	51
Discussion	.....	77
Limitations of Study	.....	103
Conclusions	.....	106
References	.....	109
APPENDIX A:	Tables of Results	126
APPENDIX B:	Guide to variable names and construction	145
APPENDIX C:	Prospectus	149
APPENDIX D:	Consent Form	235
APPENDIX E:	Instruments	240
	Demographic Questionnaires	241
	Shipley Institute of Living Scale: Verbal	244
	Shipley Institute of Living Scale: Abstract	245
	Childhood Questionnaire	246
	Childhood Memories of Parenting (EMBU)	248
	Sexual Abuse Scale	256
	Beck Depression Inventory	258
	State-Trait Anxiety Inventory	261
	Substance Abuse Family Tree	262
	Alcohol and Drug Use Questionnaires	263
APPENDIX F:	Institutional Review Board Approval	266
	Letter of Approval	267

List of Tables

Table 1	Demographic Characteristics of the Sample	127
Table 2	Demographic Variables and Between Group Differences.	128
Table 3	Results of Univariate Chi Square Analyses: Significant Dichotomous Parent Variables.	129
Table 4	Results of Univariate Chi Square Analyses: Significant Dichotomous Self Substance Abuse Variables	130
Table 5	Results of Univariate Chi Square Analyses: Significant Dichotomous Self and Socioeconomic Variables.	131
Table 6	Results of Univariate Logistic Regression: Significant Relationships Between Continuous Variables and Violent Crime Convictions	132
Table 7	Results of Multivariate Logistic Regression: Significant Parent Variables	133
Table 8	Results of Multivariate Logistic Regression: Significant Variables from the Intermediate Self Substance Abuse Model.	134
Table 9	Results of Multivariate Logistic Regression: Significant Self Variables (excluding substance abuse variables)	135
Table 10	Results of Multivariate Logistic Regression: Significant Socioeconomic Variables	137
Table 11	Results of Multivariate Logistic Regression: Final Child/Adolescent Predictor Model.	138
Table 12	Classification Table for Childhood/Adolescent Model.	139
Table 13	Results of Multivariate Logistic Regression: Concurrent Predictor Model.	140
Table 14	Classification Table for Concurrent Model	141
Table 15	Results of Multivariate Logistic Regression: Comprehensive Predictor Model.	142
Table 16	Classification Table for Comprehensive Model	143
Table 17	Comparison of Results of Stepwise Logistic Regression Analyses of the Relationship Between Intoxication and Both Self-Reported Violent Crime and Official Record of Conviction for Violent Crime	144

Abstract

One hundred and sixty-seven female inmates participated in an investigation of violent crime correlates. The relative lack of empirical evidence about female violent offending compared to that for males prompted this study. Risk and protective factors associated with violence were identified from the empirical literature then analyzed with stepwise logistic regression as predictors of conviction for violent crime.

Contrary to expectations, intelligence and parental criminality did not significantly contribute to the prediction of a conviction for a violent crime. The significant predictors with a positive association with conviction for a violent crime included intoxication at time of current crime, 21 years old or younger at time of crime, depressive symptoms at time of data collection, and a childhood history of sexual abuse. The significant negative associations with conviction for violent crime included having not been raised by both biological parents, drug addiction, anxiety symptoms at time of data collection, mother's substance abuse, and previous incarcerations.

Furthermore, four of these predictors met additional statistical criteria, in terms of magnitude of the odds ratio and variance, qualifying each as either a risk or protective factor. The risk factors (odds ratios ≥ 2) included intoxication at time of crime and being younger than 21 years at time of crime. The protective factors (odds ratios $\leq .5$) included having not been raised by both biological parents and previous incarcerations.

These results provide additional evidence that contributes to clarifying the similarities and differences in the backgrounds of male and female violent offenders, suggesting that there may be important gender differences in the development of violent behavior, specifically the developmental roles of childhood physical abuse and sexual abuse. In addition, differential effects on risk for violent crime conviction were observed for different kinds of substance abuse by both the participants and by their parents.

Dissertation: Female Criminal Violence

An exploratory analysis of risk factors for criminal violence by women

Introduction

The problems related to violence present a serious and complex social issue. Violence prevention and treatment efforts require clarification of the complex interactions between the social, psychological, and biological processes that contribute to the development of violent behavior (Hawkins, 1995; Rosenberg & Mercy, 1991b). Accordingly, violence studies have evolved from simple analysis of one or two correlates of violence to increasingly comprehensive multivariate methods (Klassen & O'Connor, 1994; Reiss & Roth, 1994; Spaccarelli, Coatsworth, & Bowden, 1995). Nevertheless, many questions persist.

Two current issues in the study of violence stimulated this study. First, there has been a disproportionately low representation of women in the empirical literature on violence, rendering violence theory essentially theories of male-perpetrated violence. Studies of violent female offenders are needed to expand theory so that applications to female-perpetrated violence can be made (Simon & Landis, 1991; Sommers & Baskin, 1993; 1994). Prevention and rehabilitation programs that are effective for women require a gender specific map of risk patterns associated with criminally violent women.

In addition, the Panel for the Understanding and Control of Violent

Behavior (Reiss & Roth, 1994) have recommended the risk/protection analysis of violence. Risk/protection analysis is an approach that originated in the public health field that conceptualizes health threats in terms of risk and protective factors, emphasizing the simultaneous study of the broad array of influences that have been linked with violence. This study used risk/protection analysis to examine several previously identified correlates of violence in a sample of female prison inmates.

Background of the Problem

There is a striking lack of research on violent female offenders (Kruttschnitt, 1994; Sommers & Baskin, 1994). Sommers and Baskin (1994) argued that most studies of female offenders do not incorporate recent developments in criminological theory based on the synthesis of control, strain, learning, and ecological theories. However, there appear to be important differences in how violent behavior develops in women and men (Goetting, 1987; 1988; Widom, 1994).

Although violent female offenders share many background characteristics with their male counterparts, the violent crimes of females are executed differently (Goetting, 1988; Kruttschnitt, 1994; McCord, 1979; Rosenbaum & O'Leary, 1981; Simon & Landis, 1991). For example, a woman is more likely than a man to kill her spouse or child (Goetting, 1988; Wolfgang, 1958). Unlike homicidal men, homicidal women are less likely to plan their crime. Moreover,

the female offender is more likely than a man to report her crime, stay with her victim until help arrives, and less likely to commit suicide following the murder (Goetting, 1987; 1988).

Although only 10% of arrests for violent crime implicate a female offender, female-perpetrated violence presents a serious public health problem. Moreover, the dearth of knowledge about violent women impedes the ability of the criminal justice system to effectively house, treat, and prepare women for post-incarceration (Hawkins, 1995; Monahan & Steadman, 1994; Rosenberg & Mercy, 1991).

Theories of Violence

The problem of crime and violence is ageless, a common quandary of human nature. Consequently, there are numerous theories of crime and violence (Wilson & Herrnstein, 1985). Although crime and violence theorists have been prolific, the present knowledge of the etiology and development of assaultive violence remains incomplete (Reiss & Roth, 1994). Various theoretical approaches offer valuable perspectives of violent behavior, but an integrated model of the complex interactive effects of the multiple risk factors associated with violence has not yet been fully developed (Hawkins, 1995; Reiss & Roth, 1994; Rosenberg & Mercy, 1991b). Klassen and O'Connor (1994) explained the relationships of the variables to violence primarily in terms of control and attachment theories.

Gottfredson and Hirschi's (1990) general theory of crime represents the

most recent version of control theory. This theory has received a growing body of empirical support (Arneklev, Grasmick, Tittle, & Bursik, 1993; Grasmick, Tittle, Bursik, & Arneklev, 1993). Gottfredson and Hirschi's control theory revolves around a central construct called self-control. The continuous development of self-control results in a level of self-control that corresponds with behaviors associated with balancing self-interest with social expectations. To the extent that elements of self-control affect aggression and violent behavior, control theory fits within a developmental social learning theory of violence.

The theoretical perspective that guides this study is a social learning developmental perspective (Laub & Lauritsen, 1993) with a focus on the effects of a variety of risk and protective factors on the development and maintenance of self-control (Gottfredson & Hirschi, 1990). A developmental framework is used to conceptualize the specific manifestations of risk markers at different developmental stages, recognizing the effects of development and age-related social transitions (entry into school, employment, and marriage) that modify the expression of a risk marker for violent behavior over time (more below).

The propensity for violent behavior can be conceptualized as a heterogeneous and continuous variable such that each individual is characterized by a baseline rate for violence. Klassen and O'Connor (1994) proposed that the social learning processes that lead to the acquisition and maintenance of aggressive behavior are the direct cause of the propensity for violence, so that all other

correlates of violence interact with the social learning process.

A major social learning perspective on aggression and violence was developed by Tedeschi and Felson (1994), who defined interpersonal aggression and violence as the use of coercive rather than cooperative strategies during conflict, with the intention of inflicting harm and/or forcing compliance. The dynamics of conflict resolution can be characterized along a continuum ranging from coercive to cooperative (Argyle, 1991). As noted above, individuals vary in terms of their baseline propensity to use aggressive and violent strategies to settle conflicts (Klassen & O'Connor, 1994). This baseline is mostly a function of social learning, but it is substantially influenced by the availability of social and material resources (Patterson, DeBaryshe, & Ramsey, 1989).

The domain of interpersonal violence covers the entire realm of destructive human behavior, from teasing to verbal abuse, from assault to murder, and from infanticide to genocide . For this study, criminal violence is defined as illegal behaviors by individuals that intentionally threaten, attempt, or inflict physical harm on others (Reiss & Roth, 1994). The definitions for violent crimes that were used in this study are those found in the Oklahoma Statutes because they are used by the Oklahoma courts to classify crimes. Therefore, the definitions correspond directly with the criterion variable for the study: an official record of a conviction for a violent crime. The violent crimes included murder, manslaughter, sexual assault, rape, robbery, other assaults, and child abuse.

Risk and Protective Factors for Violent Behavior

Several risk and protective factors have been linked to the development of violent behavior. These factors represent both social processes and individual traits that contribute to the development of an individual's propensity for violence. There is a general consensus that adult violence has its origins in childhood (McCord, 1979; 1988; Reiss & Roth, 1993). How violence risk factors are manifested and measured for research purposes is largely a function of the developmental stage of the individual. For example, psychopathology can represent continuous risk from infancy to adulthood, with different manifestations that are specific to each developmental period. Psychopathology is a modest predictor of aggression and violence at all developmental stages (Monahan, & Steadman, 1994). In infancy it may appear as the tendency to become overstimulated easily and/or difficult to soothe, coupled with an adverse parent-child fit. This condition may facilitate the development of significant childhood and adolescent behavioral disorders, e.g., conduct disorder, that in turn lead to the development of antisocial personality disorder in adulthood. In adulthood, joblessness and unstable personal relationships surface as risk factors in the lives of violence-prone individuals (Hawkins, 1995).

This review does not cover the entire literature of factors that have been associated with violence, rather it is limited for the most part to those risk factors that were available from the prison data base used in this study. One exception is

temperament.

Although there was no measurement of temperament in the prison data base, childhood temperament has been linked to the development of violent behavior (Capaldi & Patterson, 1996; Laub & Lauritsen, 1993; Robins, John, Caspi, Moffit, & Stouthamer-Loeber, 1996). Laub and Lauritsen (1993) reported that preschool children who tend to be fearless, very active, and unmanageable are at greater risk for developing antisocial traits in later childhood, adolescence, and adulthood. High activity, impulsivity, and distractibility are all risk factors for the development of problems with self-control. These characteristics interact significantly with intelligence (White, Moffitt, Caspi, Bartusch, Needles, & Stouthamer-Loeber, 1994) such that low IQ combined with behavioral disinhibition is associated with aggression in childhood and adolescence (Farrington, 1991). Cognitive inhibition has been implicated as an important variable for predicting base rates of violent behavior (Barratt, 1994). However, this relationship is dependent on the parent-child relationship. The rest of this review will cover risk and protective factors that are linked to parenting (parent-centered), individual characteristics (person-centered), and socioeconomic influences (social-centered).

Parent-Centered Risk Factors

Several parent-centered risk factors have been established as major contributors to the development of a propensity for criminal violence (Laub &

Sampson, 1988). These factors include: (1) parental characteristics; (2) parental child-rearing practices, and (3) domestic violence including the physical and sexual abuse of children. Each of these factors strongly influence family organization, nurturance, and discipline, which in turn influence the ability of the family to effectively socialize children.

Parental characteristics

Parents set the tone for family life. Their ability to create and maintain a safe, nurturing, and supportive environment for child rearing is largely determined by their own maturity and mental health. Parental characteristics associated with negative child outcomes include parental psychopathology (Frick, Kuper, Silverthorn, & Cotter, 1995; Klassen & O'Connor, 1994) criminality (Farrington, Loeber, & Van Kammen, 1990; Loeber & Dishion, 1983; Lewis, Shanok, & Balla, 1979), and substance abuse (Convit, Jaeger, Lin, Meisner, & Volavka, 1988). These parental characteristics potentially increase the degree of dysfunctional family relationships (e.g., conflict and hostility) that in turn increase the probability that their children will experience serious problems in adulthood.

Parental child-rearing practices

Gottfredson and Hirschi (1990) argued cogently that self-control is determined by socialization processes within the family. The level of self-control achieved by adulthood then predicts the baseline propensity for adult criminal and

violent behavior. Parental disciplinary practices within a warm, stable parent-child relationship are the primary mechanisms by which effective socialization occurs. Child-rearing practices that have been linked to violent offending include coercive disciplinary practices, disorganized family management practices (inconsistency), severe physical punishment, and lack of supervision (Hawkins, 1995; Laub & Lauritsen, 1993; McCord, 1988; Patterson & Capaldi, 1991; Patterson, DeBaryshe, & Ramsey, 1989; Straus, 1991). The relationship between severe physical punishment and adult violent offending is stronger when the physical punishment is carried out within the context of a rejecting parent-to-child relationship (Rutter, 1987).

Straus (1991) emphasized the etiological role of childhood physical punishment in the propensity for the use of violence in adulthood. He claimed that physical punishment teaches violent means for conflict resolution that forms the basis for an intergenerational transmission of violence by teaching violent means for conflict management and by the tendency for physical punishment to escalate into physical abuse (Straus, 1991; Widom, 1989). Indeed, parents who approve of physical punishment have much higher rates of physical abuse than parents who disapprove of physical punishment (99/1,000 versus 28/1,000). Although the processes linking childhood physical punishment and adult violent behavior have yet to be fully explicated (Giles-Sims, Straus, & Sugarman, 1995), a history of physical abuse is considered a risk factor for adult violent offending

(Hawkins, 1995; Lewis, Shanok, Pincus, Grant, & Ritvo, 1979; Widom, 1991).

Domestic Violence

Domestic violence has been explored extensively as a risk factor for a wide range of problems across the life span, though the links between adult violent behavior and both physical and sexual abuse have not been fully explicated (Widom, 1989). For the most part, the parents determine the degree of domestic violence in a home. The abuse directed at children becomes an important part of their personal history and development. This review will now turn to person-centered risk factors for violence.

Person-Centered Risk Factors

Physical Abuse

Witnessing and experiencing violence in the home has been associated with both juvenile and violent offending (Herrenkohl, Herrenkohl, & Toedter, 1983; Lewis et al., 1991; Klassen & O'Connor, 1994; Rivera & Widom, 1990). Girls and boys seem to be equally at risk for physical abuse (Knutson & DeVet, 1995). There is considerable evidence that aggressive parents produce aggressive children, especially in the context of a rejecting parent-child relationship (McCord, 1988; Rutter, 1987) wherein the child is both target and observer of aggressive parental behavior.

The fact that most abused children do not become violent leads to questions about the strength of the relationship between exposure to family

violence and adult violent crime (Straus, 1980). Widom (1989) reported an extensive review of the literature looking at the intergenerational hypothesis linking child abuse to later violence. She concluded that methodological problems weakened the empirical evidence of the intergenerational transmission of violence.

The debate regarding the magnitude of effects of physical abuse in childhood on violent behavior in adulthood is ongoing (for this debate, see Egeland 1993; Widom, 1989; and Kaufman & Zigler, 1993). However, Klassen and O'Connor (1994) pointed out that from a risk assessment perspective, the evidence of increased incidence of child abuse and other forms of domestic violence in the history of violent offenders is more than sufficient to consider both substantial risk markers for violent offending. Moreover, several authors have concluded that there is a consistent though modest relationship between childhood maltreatment and violent crime (Malinosky-Rummell & Hansen, 1993; Rivera & Widom, 1990).

Estimates of the percentage of female inmates with a history of physical abuse range from 30% (Lake, 1993) to 53% (Pollock-Byrne, 1990, cited in Marcus-Mendoza, Sargent, & Ho, 1993). Marcus-Mendoza et al. (1993) reported that 74% of an Oklahoma female inmate sample (N=551) recounted a history of childhood physical abuse. Therefore, the estimated incidence of physical abuse found in female inmate populations is likely to be much greater than that for the general population (Widom, 1989).

Race and gender influence the relationship between childhood maltreatment and adult violent crime. Women with a history of physical abuse are less likely than their male counterparts to become violent offenders (Widom, 1991). In a similar fashion, white children appear less vulnerable than African-American children to the negative consequences of abuse (Kruttschnitt, 1994; Rivera & Widom, 1990; Widom, 1991). Thus, it seems that growing up white and female attenuates the adverse effects of childhood physical abuse on the development of criminally violent behavior.

Childhood Sexual Abuse

A history of childhood sexual abuse has been established as a risk factor for adult criminal behavior and female violent crime (Widom & Ames, 1994). Few studies have directly assessed the relationship between childhood sexual abuse and violent crime. However, additional evidence for a possible relationship is suggested by the increased incidence of sexual abuse in the histories of women with borderline personality disorder who tend to exhibit a greater propensity for violent behavior (American Psychiatric Association, 1994; Coleman, 1994).

Additional indirect evidence is found in the increased incidence of childhood sexual abuse in high risk adult populations including female offenders (Reiss & Roth, 1993). National estimates for female offenders (35-63%) far exceed the 12% estimate for the general population (Lewis et al., 1991; Pollock-Byrne, 1990, cited in Marcus-Mendoza et al., 1993). Lewis et al. (1991) found that 48% of

their sample of 21 females had a history of sexual abuse by a family member. In a large sample (N=551) of Oklahoma female inmates, over half reported a history of sexual abuse before age 18 (Marcus-Mendoza et al., 1993).

The link between adult violent offending and childhood sexual abuse may be influenced by a variety of other factors that mediate the short and long-term effects of sexual abuse (Reiss & Roth, 1993). Those factors reflect the specific characteristics of the abuse event, the child-perpetrator relationship, and the response to disclosure of the abuse (Beitchman et al., 1992; Briere & Elliott, 1994; Browne & Finkelhor, 1986; Kendall-Tackett, Williams, Finkelhor, 1993; Reiss & Roth, 1993). These may be mediated by other family characteristics, e.g., parental supervision, marital conflict, and parental psychopathology.

Yama and his colleagues (1992) reported that the families of incest victims exhibit several problems including dysfunctional interactions, violence, and parental mental disorder. Since adverse outcomes linked to sexual abuse have been hypothesized to be associated with other factors, e.g., duration of the abusive experience over time, sexual abuse can be considered as a potential risk factor in a continuum of cumulative risk.

Because of the wide range of factors that affect the outcome of childhood sexual abuse, it might be considered to be an indirect risk factor for violent crime. Moreover, given the high degree of multiple risks present in female inmate populations, sexual abuse is expected to co-vary with mental disorder of the

inmate, parental psychopathology, and potentially with other measures of the family environment. It is included in the present analysis as a risk factor for violence for what it can contribute to the cumulative effects of risk factors.

Gender

Although gender was not assessed in the present study, the striking gender ratio for violent crime invites a brief discussion of gender differences in violent offending. Indeed, the potential for gender differences in the development of violent behavior was one of the issues that inspired this project. In reality, female gender may confer protection against the development of violent behavior (Simon & Landis, 1991). Only 10% of all violent crimes are committed by women (Kruttschnitt, 1994). How gender affects the development of violent behavior is not known, though biological, e.g., sex hormones, and social processes have been studied.

Contrary to common sex mythology, the rates of aggressive behaviors for girls and boys start out equal, then diverge in early childhood (Eagly & Steffen, 1986; Hyde, 1984; 1986; Kruttschnitt, 1993). Thus, the gender gap is apparent before school age. Kellam, Rebok, Ialongo, and Mayer (1994) concluded that elementary school girls were not nearly as aggressive as their male peers. The authors stated that the determinants of gender effects remain unclear. Campbell (1995) reported that in adulthood, men and women attach different meanings to acts of aggression; women were more inclined to view aggression as a loss of

control whereas men were more likely to view aggression as instrumental and justified.

The findings that boys were more aggressive than girls is consistent with the bulk of the literature on gender differences and aggression (Hyde, 1986, Yoshikawa, 1994). However, there is one thing that the sexes share. Yoshikawa (1994) noted that aggression stability coefficients were the same for girls as for boys. Thus, after the early childhood period, aggressive individuals tend to remain so, regardless of gender.

Age

The inverse relationship between age and the incidence of violent offending is well established (Hawkins, 1995). Specifically, the younger age groups are at greatest risk for violent crime in both males and females (Reiss & Roth, 1994; Sommers & Baskin, 1994; Sullivan-Coseti, 1988; Wolfgang, 1958). Of course, age interacts with other factors in the development of violent behavior (Tedeschi & Felson, 1994).

Cognitive Ability

During most of this century, the dominance of sociological explanations for crime temporarily obscured the role of intellectual abilities as risk factors for violence (Lilly, Cullen, & Ball, 1995). In contrast, psychological explanations of violence have placed much greater emphasis on the relationship between intelligence and violence, though in varying degrees of explicitness and

significance. Current criminological perspectives identify intellectual deficiency as an important risk factor for the development of criminal violence (Cohen & Machalek, 1988; Gottfredson & Hirschi, 1990; Wilson & Herrnstein, 1985).

Intellectual ability has been operationally defined in the violence literature by a wide range of cognitive measures: scores on intelligence tests (primarily the Wechsler batteries), school achievement tests, and student's grades. In this discussion, the terms cognitive ability, intelligence, IQ, and academic achievement will be used interchangeably to refer to a broad range of cognitive processes that are associated with learning, abstract reasoning, decision-making, planning, and self-monitoring.

The empirical evidence clearly shows that measures of both intelligence and school achievement provide indicators of risk for the development of violence (Hodgins, 1992; Loeber, Green, Keenan, & Lahey, 1995; Widiger & Trull, 1994). There is empirical evidence of an inverse relationship between intelligence and crime. High risk boys with higher IQ's are less likely than those with lower IQ's to become delinquent (Herrnstein & Murray, 1994; Werner, 1987, cited in Yoshikawa, 1994; Wilson & Herrnstein, 1985). The preventive effects of higher levels of intelligence have been replicated in other studies (Kandel et al., 1988; White, Moffitt, & Silva, 1989).

Hodgins (1992) found additional evidence for the pronounced relationship between intelligence and violence. In a Swedish birth cohort, she found that

intellectually deficient males were five times more likely than normals to commit a violent offense. These findings were even more striking for females.

Intellectually deficient women were 25 times more likely than normals to commit a violent offense. Hodgins (1992) cautioned that higher crime rates and the prevalence of substance abuse related crime would weaken the relationship between intelligence and violence in the United States.

In summary, intelligence serves as a benchmark for the comparison of new violence predictors (White et al., 1994; Hirschi & Hindlehang, 1977). Although the complex interactions between intellectual abilities and violent offending are not fully explicated, it is clear that intellectual deficits interact with other risk factors in a cumulative fashion in the development of aggression and violence (Yoshikawa, 1994). Many current research questions revolve around the various interpretations of the statistical relationships between measures of intelligence and antisocial behaviors (Lynam, Moffitt, Stouthamer-Loeber, 1993; Rutter, 1987).

Psychopathology

There is extensive empirical literature on the relationship between mental disorders and criminal violence (Monahan, 1992). The available prison data base used for the present study does not permit analysis of lifetime or current psychopathology, so this discussion will be limited to the most salient and reliable findings, focusing on studies that will allow discussion of the limited available data for psychopathology in this sample. The psychopathology data available

from the prison project relate to depressive and anxiety symptoms measured at the time of data collection. The Diagnostic Interview Schedule (NIMH-DIS; Robins, Helzer, Croughan, Williams, & Spitzer, 1981), a standardized instrument measuring lifetime and 12-month occurrences of DSM-III-R diagnoses, was available for only a few cases, so could not be included in the present analysis that required a much larger sample size.

The empirical evidence has clearly established that psychopathology is associated with violence, but the relationship is complex. How psychopathology leads to violence is not completely understood, except perhaps in the rare instances of psychosis, e.g., auditory command hallucinations. Mental disorders have both developmental (Achenbach, Howell, McConaughy, & Stanger, 1995a; 1995b; Hawkins, 1995; Loeber et al., 1995) and concurrent effects (Swanson, Holzer, Ganju, & Jono, 1990) on aggression and violence.

Research assessing DSM IV childhood behavior disorders provides some interesting evidence. Childhood behavior problems, especially conduct problems, have been linked to adult violent crime (Farrington, 1991; Laub & Lauritsen, 1993; Reiss & Roth, 1994). Interestingly, Loeber and Stouthamer-Loeber (1986) reported that parent-child socialization factors, e.g., discipline practices, predicted subsequent conduct problems and delinquency better than parental criminality. There appears to be a subgroup of males and females (Yoshikawa, 1994) who exhibit extreme behaviors that persist over time (Laub & Lauritsen, 1993). In this

subgroup of persistently and severely antisocial individuals we might expect that their pattern of risk factors would reflect greater cumulative risk, i.e., a combination of low SES, low IQ, and severe family disorganization.

Paradoxically, whereas childhood antisocial traits are the best predictors of adolescent and adult antisocial traits, most antisocial children do not become antisocial adults (Laub & Sampson, 1988; Robins, 1978). Laub and Lauritsen (1993) emphasized that predicting aggression, crime, and violence in adulthood from childhood factors is difficult. Individual differences in violent behavior are not simply a function of childhood tendencies. For example, empirical evidence indicated that marital and job stability established in adulthood prevents violent offending in at-risk populations (Feehan, McGee, Williams, & Nada-Raja, 1995; Laub & Lauritsen, 1993; Sampson & Lauritsen, 1994).

Eronen (1995) studied the prevalence of mental disorders in a sample of Finnish female homicide offenders. Psychopathology was determined through standardized interviews and instruments by experienced forensic psychiatrists. The results indicated that female homicide offenders had a 10-fold higher odds ratio than the general female population for diagnoses of schizophrenia or a personality disorder. Conversely, major depression and anxiety disorders did not significantly increase the risk of committing homicide.

In summary, any questions remain regarding the nature of the relationship between psychopathology and violence. A wide array of mental disorders have

been linked to violent behavior in general, and female violent crime in particular (Eronen, 1995). Data from the Epidemiologic Catchment Area Study clearly showed that mental illness is a significant, though modest risk for violent behavior (Monahan & Steadman, 1994; 1996; Swanson et al., 1990; Swanson & Holzer, 1991). It is important to keep in mind that the extensive overlap between correlates of psychopathology, substance abuse, and violence confounds research efforts. Predicting violence in individual cases remains a tricky issue; it is a complex and highly dynamic process (Monahan & Steadman, 1996).

Substance Abuse

Substance abuse plays a major role in the commission of violent crime in the United States (Roth, 1994; Wolfgang, 1958). The empirical evidence is consistent and clear regarding a positive correlation between violence and acute alcohol abuse. However, the relationship is more complicated for the other psychoactive substances. The underlying relationships between substance abuse and violence vary across type of substance as well as exhibiting different interactions with mental disorder and history of physical abuse (Collins, Schlenger, & Jordan, 1988; Swanson, Holzer, Ganju, & Jono, 1990).

Alcohol is the most common substance of abuse (Roth, 1994). It is legal and relatively cheap. The relationships of short- and long-term alcohol abuse to violent crime rates appear to be stronger than those for the other psychoactive substances. A significant proportion of assaults and homicides are committed by

intoxicated persons (victims are also likely to be inebriated). The pharmacological effects of alcohol examined in the alcohol-violence relationship include behavioral disinhibition, decreased verbal fluency, and decrease abstract thinking and reasoning. These are hypothesized to contribute to violence by increasing interpersonal misunderstandings and conflict, whereas decreasing the cognitive and verbal skills needed to resolve conflicts without resorting to violence (Miczek et al., 1994; Roth, 1994).

Steele and Josephs (1990) proposed a cognitive behavioral relationship between alcohol and violence (and other forms of inappropriate behaviors). They described alcohol myopia, an attention deficit caused by alcohol intoxication. Acute alcohol inebriation results in "myopia", characterized by impaired perception and thought, such that the drunk responds to the most salient social cues while failing to consider both important contextual cues and the probable consequences of behavior prior to acting. In other words, drunkenness reduces the ability to see the forest for the trees:

Alcohol limits one's perceiving and thinking so as to leave one still able to respond to salient, immediate cues, but less able (than if one were sober) to respond to more peripheral cues and embedded meanings. Therefore, when the salient cues elicit violence and the peripheral ones inhibit it, alcohol intoxication releases violence (p. 923).

Thus, alcohol increases the probability of violence through disinhibition caused by changes in perception and cognition (Steele & Josephs, 1990).

Blankfield (1991) found that violent crimes were more common in alcoholics compared to other criminals. Moreover, these alcoholic violent offenders had histories of aggressive traits predating their alcohol abuse. McCord (1981) noted that the backgrounds of criminal alcoholics are more similar to other criminals than to noncriminal alcoholics. Regier et al. (1990) reported substantial comorbidity of substance abuse with psychopathology in the Epidemiologic Catchment Area (ECA) Study. These findings are consistent with the notion of cumulative risk that guided this study.

Women arrested for drug offenses represent the fastest growing population in the prison system (Wellisch, Prendergast, & Anglin, 1994). Goldstein (1992) described a three part framework for the drug/violence nexus: psychopharmacological, economically compulsive, and systemic. The psychopharmacological effects are associated with increased risk for the stimulants, e.g., crack and speed, due to neurological irritability and impulsivity. Economic compulsion refers to crimes committed by addicts who need money to buy drugs. The systemic effects refer to sales and distribution of illegal drugs. It is not only illegal to possess and sell drugs, but the activities of drug markets are notoriously violent (Speckart & Anglin, 1986).

Socioeconomic Factors

There is a general consensus that socioeconomic factors play an important role for understanding a majority of violent acts (Dobash & Dobash, 1984;

Monahan, 1981; Tedeschi & Felson, 1994; Wilson & Herrnstein, 1985; Wolfgang, 1958). Population studies have clearly demonstrated that community- and cultural-level factors influence rates of violent crime (Reiss & Roth, 1993). The pathways by which social structures like race and class lead to individual acts of violence have yet to be fully explicated. However, the strong relationship between poverty and violence has generated a large body of empirical literature. Nevertheless, most underprivileged children do not grow up to become criminally violent adults. Other influences, or lack thereof, are required.

A corollary of control theory is that the optimal development of self-control occurs in family and community environments with adequate resources and stable relationships. Therefore, impoverished family and communities have greater difficulty facilitating the development of mature self-control that is required to prevent violence.

Klassen and O'Connor (1994) identified three categories of social variables that are related to violent behavior: stressful circumstances, weak social support, and biased social structures, e.g., restricted access to education on the basis of gender, race, or socioeconomic status. Gang membership and weapons possession have also been examined as situational risk factors that increase or decrease the probability of violence in high baseline individuals.

Three primary social risk factors for violence have been identified: (a) crowded neighborhoods of poor families with large income differences; (b) the

social churning and subsequent disorganization associated with mobility and family disruptions; and (c) opportunities for violence associated with illegal markets in drugs and firearms (Reiss & Roth, 1993). Illegal drug markets thrive in impoverished, unstable neighborhoods.

The statistical study of social factors has demonstrated significant interaction effects between known risk factors. For example, ethnicity and socioeconomic status interact. In conditions of poverty, whites are less likely than blacks to be homicide victims, but as socioeconomic status climbs the race differential falls (Reiss & Roth, 1993).

It is beyond the scope of this paper to review all of the powerful social forces that directly contribute to violent crime rates except to emphasize that poverty produces multiple stressors that facilitate the use of aggression and violence. Poverty is a primary link between minority racial status and criminality, when socioeconomic status is equal significant race differences disappear. The risk for both violent offending and victimization are greatest in young African American males (Hawkins, 1995). Moreover, young African American females are at greater risk than young white males (Simpson, 1991).

An additional social variable is the victim-offender relationship. This variable clearly differentiates violent crimes by gender. Wolfgang (1958) noted that women are more likely than men to kill a family member or intimate. When the victim is a husband or lover there is usually a history of relationship violence,

i.e., women are more likely than men to kill someone who has threatened them with physical harm (Campbell, 1995; Fagan & Browne, 1993; Fagan & Wexler, 1987; Goetting, 1988; Simpson, 1991; Wolfgang, 1958). Moreover, female violent offenders appear to be different than their male counterparts in other important ways. Browne (1987) reported that battered women who have murdered their spouse do not have the history of childhood problems that are common in other violent offender populations. That female violent offending differs from that of males supports the argument that theories of violence erected upon empirical evidence derived from male-only populations may not inform the understanding of female-perpetrated criminal violence.

Current Study

Klassen and O'Connor (1994) recommended that differential patterns of risk factors be identified for subclasses of offenders. The results of this study may help to establish gender specific risk/protection patterns for women that could improve risk management in various groups such as battered women or psychiatric populations. The purpose of this study was to explore how known risk and protective factors for violent behavior relate to women by examining differences between violent and nonviolent offenders along several dimensions available from a data base collected from female prisoners.

Research Question

The primary question addressed in this study was as follows: Do the risk and protective factors identified from previous studies aid prediction of violent crime convictions in a sample of incarcerated women? Specifically, predictor variables available from the prison data base that should increase risk for an official record of a conviction of violent crime included: serious impoverishment, parental rejection, parental substance abuse, childhood sexual abuse, lower intelligence and substance abuse by the individual. Conversely, those predictor variables that should decrease risk for conviction of violent crime include: higher socioeconomic status, higher intelligence, and parental warmth. The role of childhood physical abuse is not clear; it may increase, decrease, or not contribute to risk for criminal violence in women.

Comment on the Data Base

The data base used in this study was obtained for a study of psychopathological correlates of female offenders. It was not originally designed to study violent behavior in women. As such, the data base lacked sufficient data regarding the history of violent behavior. Therefore, in order to look at differences between violent and nonviolent female offenders the criterion variable was obtained from official records providing the history of criminal convictions by type of crime. The definition used to group "violent" and "nonviolent" inmates was restricted to the presence or absence of a conviction for a violent

crime. Consequently, there may be women in the nonviolent group, i.e., no violent crime conviction, who have a significant history of violent behavior. This can occur for several reasons: the violence was not criminal, violent crimes may not have been detected, and violent crimes may have been reduced to less serious charges. The latter is due to the process of plea bargaining, leading to reduced charges in exchange for a guilty plea. For example a robbery perpetrated to obtain money for drugs could be reduced to a burglary charge.

Accordingly, the results of the present study cannot be used to directly address differences between violent and nonviolent female offenders. However, the results may be used to look at differences between the most serious violent female offenders and other female offenders. The study participants were incarcerated for a wide range of crimes, from writing hot checks to murder. Moreover, serious violent crimes are not reduced in the process of plea bargaining, a process that blurs the boundaries of less serious, nonviolent crimes. Therefore, the results of this study may be used to understand the development of the most serious female violent offending.

Method

Participants

The sample for this study consisted of 167 women incarcerated at Mabel Bassett Corrections Center (MBCC) in Oklahoma City, Oklahoma during the time period from July, 1994 through December, 1995. MBCC is a full range

correctional facility, providing minimum to maximum security for female inmates. Participants ranged in age from 19 to 58 years (S.D. 7.21), with a mean age of 31.01 years. The ethnic composition of the sample was as follows: 41.34% White; 41.92% African American; 2.39% Hispanic; 8.38% Native American; and 5.99% other ethnic groups. Additional data were collected from criminal records maintained by the Oklahoma State Bureau of Investigation.

Instruments

The instruments used in this study included demographic questionnaires, the Shipley Institute of Living Scales (SILS; Shipley, 1940; Zachary, 1986), the Childhood Questionnaire (CQ; Tartar, 1979), the Childhood Memories of Parenting (EMBU; Perris, Jacobsson, Lindstrom, von Knorring, & Perris, 1980), the Beck Depression Inventory, (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the State/Trait Anxiety Inventory (STAI: Form Y State Scale; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), the Sexual Abuse Scale (SAS; DiTomasso & Routh, 1993), the Substance Abuse Family Tree (SAFT; Mann, Sobell, Sobell, & Pavan, 1985), the Alcohol and Drug Use Questionnaires (developed by Nixon and colleagues at the Oklahoma Center for Drug and Alcohol Research), and the OSBI official criminal record.

Demographic Questionnaires

The demographic questionnaires were constructed to obtain identifying information including socioeconomic indicators, health (including history of

pregnancy), and criminal history. Respondents either checked an appropriate response from a given list or filled in the blank. The following variables were drawn from the demographic questionnaires: age, age at time of incarceration, race, education, occupation at time of arrest, socioeconomic status, history of previous incarcerations, crime(s) for which they were currently serving time (referred to in this study as current crime), family history of incarcerations, employment at time of crime, presence of children, use of public assistance, and the relationship of substance use to the crime for which they were incarcerated.

Socioeconomic status (SES) was calculated using Hollingshead's (1975) Four Factor Index of Social Status. The value for SES was calculated from two variables found in the data base: occupation and the number of years of completed education. The possible range of scores is 8 to 66:

<u>Social Strata</u>	<u>Range of computed scores</u>
Major business and professional	55-66
Medium business, minor professional, technical	40-54
Skilled craftsmen, clerical, sales workers	30-39
Machine operators, semiskilled workers	20-29
Unskilled laborers, menial service workers	8-19

Shipley Institute of Living Scales (SILS)

The Shipley Institute of Living Scales (SILS) have been used as a brief measure of intellectual functioning since 1939 (Shipley, 1940; Zachary, 1986). The SILS has two subscales, vocabulary and abstraction. The vocabulary scale is comprised of 40 items, each of which is composed of a stimulus word that is

followed by a group of four other words. The respondent is asked to circle one of the four other words that would be synonymous with the stimulus word. The abstraction scale is comprised of 20 items. Each item begins with a stimulus of words, letters, or numbers that represent a logical sequence. However, the sequence includes a blank space. The respondent is asked to fill in the blank to complete the logical sequence.

The raw score for both subscales is the total number of correct responses. For the present study, the two raw scores were added together for a total raw score, the Shipley Total Score, which was then used to derive an estimated WAIS-R Full Scale IQ score from Table D-1 of the Shipley manual. This estimated score was used as the measure of participants' cognitive ability. For the present study, the estimated WAIS-R Full Scale IQ score was used to facilitate interpretation and to compare it to previous violence studies that reported WAIS-R scores.

Zachary, Crumpton, and Spiegel (1985) used linear regression and continuous norming, versus stratified norming, to develop a procedure for calculating age-adjusted WAIS-R IQ scores from the Shipley Total Scores. This procedure was used to develop Table D-1 of the Shipley Manual. The Shipley Total Score and the participant's age were found in Table D-1 and the associated estimated WAIS-R IQ was added to the data base to be used in the present analysis.

Split-half reliability Spearman-Brown correlation coefficients were .87 for

Vocabulary; .89 for Abstraction; and .92 for the Shipley Total Score (the range was not reported). Test-retest reliability coefficients varied substantially across samples, ranging from a median of .60 for Vocabulary to .78 for Shipley Total Score. The median interval was 12 weeks (range = 2 to 16 weeks). Although variable, the results indicated generally high reliability coefficients (Zachary, 1986). The specific samples used in calculating reliability coefficients were not described in the Shipley manual.

Validity studies have been carried out primarily to assess the validity of the Shipley for a brief estimate of current intellectual functioning. The manual described evidence indicating sufficient content validity. The Shipley has also been used to estimate scores with the Wechsler Adult Intelligence Scale-Revised (WAIS-R) in a wide range of clinical samples. Shipley correlations with the WAIS-R Full Scale IQ ranged from .68 to .90. Additional validity studies correlated the Shipley with other measures of intelligence and academic achievement producing correlation coefficients ranging from .49 for the Slosson Intelligence Test to .78 for the Army General Classification Test. These provide additional evidence for the construct validity of the Shipley as a brief estimator of current intellectual functioning. Zachary (1986) concluded that the Shipley compares favorably with other measures of adult intelligence in terms of good temporal stability, internal consistency, content validity, and construct validity.

Childhood Questionnaire (CQ)

The Childhood Questionnaire (CQ) was originally developed by Tartar and colleagues (1979) to measure the history of childhood difficulties in adults. He started with a symptom checklist that had been used to diagnose hyperkinetic and/or minimal brain dysfunction syndrome which is now known as attention deficit disorder/with or without hyperkinesis. The CQ is comprised of 50 true/false items that reflect a wide range of childhood problems. True items are given a value of 1 and false items a value of 0. The total score is a simple addition of all items. The CQ has three scales: Learning Disorder, Conduct Disorder, and Attention Deficit Hyperactivity Disorder. This instrument was introduced into the protocol after data collection had begun. It is available for only 66 cases (approximately 40% of the sample). Consequently, because of the requirements of the present statistical analysis, this data will only be used in a limited set of analyses (more below).

De Obaldia and Parsons (1984) studied the reliability and validity of the CQ in a sample of hospitalized male alcoholics. They concluded that the instrument was useful for studying the existence of premorbid behavior disorders in alcoholics. High test-retest reliability of the Hk/MBD ($r = +.93, p < .05$) was found for the number of Hk/MBD symptoms checked on both test administrations (test period mean = 47 + \- 2 days). Item analysis revealed that 73.5% of the specific symptoms reported in the first checklist administration were

reported again at the second administration. Further evidence of reliability was provided by the stability of Hk/MBD scores exhibited during multiple administrations. As expected, during hospitalization both Beck Depression Inventory scores and State-Trait Anxiety Inventory Scores (State-scale) went down approximately 50% during the time between the first and second administration while the total number of Hk/MBD endorsements did not change (De Obaldia & Parsons, 1984).

Validity was assessed by administering the same instrument to parents and siblings who were asked to rate the subject. There were significant correlations and levels of agreement on specific items between subjects's claimed symptoms and their families' retrospective reports (De Obaldia & Parsons, 1984).

Childhood Memories of Parenting (EMBU)

The Childhood Memories of Parenting (EMBU stands for the Swedish name *Egna Minnen Beträffande Uppfostram*) was developed in Sweden by Perris, Jacobsson, Lindstrom, von Knorring and Perris (1980) to measure memories of the childrearing behaviors of both parents. The items were developed to reflect a multidimensional model of parental rearing behavior that generated 14 a priori facets: abusive, depriving, punitive, shaming, rejecting, overprotective, over-involved, tolerant, affectionate, performance oriented, guilt engendering, stimulating, favoring siblings, and favoring subject. In addition, two items were included to assess the degree of consistency in parental rearing behavior and the

degree of strictness of parental rearing style (Gerlsma, Emmelkamp, & Arrindell, 1990).

The version of the EMBU used in this study was the 72-item form. Items include a stimulus statement coupled with a 4 point Likert type response scale, measuring the degree to which the stimulus statement was true for the respondent. For example, one stimulus item is "It happened that I wished my parents would worry less about what I was doing." The respondent is instructed to circle one of four alternatives: (1) "No, never"; (2) "Yes, but seldom"; (3) "Yes, often"; and (4) "Yes, most of the time." The circled numbers directly correspond to numerical values that were then summed for a total score.

The instrument has been used to assess memories of parental rearing behaviors in a wide variety of clinical populations. Initial factor analyses revealed four factors: rejection, emotional warmth, overprotection and favoring subject (Arrindell, Emmelkamp, Brilman, & Monsma, 1983).

For the present study, in addition to measuring memories of parenting, the EMBU was used to identify participants' history of childhood physical abuse. The history was considered positive if the respondent circled one of the affirmative responses to either item #56 "It happened that my parents beat me for no reason" or item #59 "I usually got beaten by my parents". This variable was constructed as a dichotomous variable representing the presence or absence of physical abuse by a parent.

Although this assessment of childhood physical abuse lacks supportive psychometric evidence, it is included for two reasons. First, childhood physical abuse is a strong predictor for subsequent juvenile and adult violent behavior, thus it would be useful to include it in a risk analysis of violence. As this is an untested measure of childhood physical abuse, the results will be interpreted with the requisite caveats. The variable will be treated as dichotomous because the positive endorsement of either item #56 or item #59 clearly suggests the history of, but not the extent of, physical abuse.

Sexual Abuse Scale (SAS)

The Sexual Abuse Scale (SAS) was developed by DiTomaso and Routh (1993) as part of a study of the relationship between dissociation and abuse to assess the presence and extent of recalled sexual abuse. It includes 11 items. Two items reflect "normal" childhood sexual experiences whereas the remaining nine items represent sexual experiences considered abusive.

Each SAS item has three parts. The first part (a.) asks the respondent if they recall a specific sexual experience occurring in their childhood. The response is either yes or no. If the answer is no, the respondent is directed to proceed to the next item. If the answer is yes, the respondent is instructed to qualify the sexual experience by circling graded prompts that address (b.) degree of distress, and (c.), degree of force.

Coons (1994) argued that the wording of the items is conceptually narrow,

too subjective, and ambiguous. DiTomasso and Routh (1994) responded to Coons' criticism by reporting the preliminary psychometric evidence of reliability and validity as well as pointing out the limited purpose of the scale, i.e., measuring the presence and extent of sexual abuse in an undergraduate population.

DiTomasso and Routh (1993) reported that the scale had good internal consistency (Cronbach's alpha = .93) and was significantly correlated with measures of (a) recall of physical abuse, (b) absorption (a cognitive construct assessing attention and its relationship to dissociation), and (c) dissociative experiences. Thus preliminary psychometric evidence was provided for its reliability and construct and convergent validity, especially in undergraduate samples (DiTomasso & Routh, 1994).

The use of this instrument in prison populations has not been assessed, consequently results need to be interpreted with caution. DiTomasso and Routh (1993) did not report the reading level of the instrument. Respondents with lower reading levels may not have understood the items in the same way as their undergraduate sample. However, the small group interview format employed in data collection at the prison allowed for significant dialogue between the examiner and the participants, who frequently asked questions.

Di Tomasso and Routh (1993) argued that scores of one or more indicate abuse, obviating the need for a cut-off score. However, a score greater than zero

could capture experiences that were only "somewhat" distressing. Though the individual may have been distressed by being exploited by an older person, this does not necessarily constitute the quality of abuse that is likely to have long term negative effects (Briere & Elliott, 1994; Reiss & Roth, 1993). A cutoff score of 8 was used in this study, reflecting moderate to serious sexual abuse.

Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI) was included in the original protocol to assess current symptoms of depression. The instrument has been widely used in clinical and normal populations since it was introduced in 1961 by Beck and his colleagues. Beck et al. (1988) reported the results of a meta-analysis of studies assessing the psychometric properties of the BDI. Their study revealed a mean coefficient alpha of 0.86 for psychiatric patients and 0.81 for non-psychiatric patients. The concurrent validity scores of the BDI were also high. The mean correlations of the BDI with clinical ratings was .72 and the Hamilton Psychiatric Rating Scale for Depression (HRSD) was .73 for psychiatric patients. For non-psychiatric subjects, the mean correlations of the BDI with clinical ratings was .60 and with the HRSD was .74. The authors also reported that the BDI discriminates subtypes of depression and differentiates depression from anxiety.

State-Trait Anxiety Inventory, Form Y-1 (STAI)

This measure of state anxiety was included in the prison instrument protocol to provide an assessment of current symptoms of anxiety. The STAI has

been used in a large number of psychological studies for a wide variety of purposes. Speilberger et al. (1983) reported that the Form Y-1 (State Anxiety) demonstrated desirably low (for a measure of state versus trait anxiety) test-retest reliabilities in samples of high school and college students, with r - values ranging from .16 to .36. The internal consistency is a more meaningful measure of reliability for state anxiety because of its transitory nature. The Cronbach alpha for the State Anxiety form was uniformly high, ranging from .86 to .95, in a variety of populations. Results of studies of the concurrent, convergent, divergent, and construct validity of the STAI are reported in the manual. Speilberger (1983) found evidence of the instruments validity for a wide range of purposes in several samples.

Substance Abuse Family Tree (SAFT)

The Substance Abuse Family Tree (SAFT) is a self-report instrument measuring substance use and abuse across four generations. This instrument is an adaptation of a family tree developed to study familial correlates of substance abuse by Mann, Sobell, Sobell, and Pavan (1985).

The Substance Abuse Family Tree items allow the respondent to report the alcohol and drug use, including its health and social consequences, for both the respondent and other family members, including grandparents, parents, aunts and uncles, self, siblings, spouse(s) and children. The instrument has two sections: a family tree and a "consequences" checklist. The family tree is drawn as a

hierarchy of labelled boxes, with both maternal and paternal grandparents at the top, descending to the bottom boxes that represent the respondents' children. Each box corresponds to one relative. On the form is a code reflecting the range of possibilities for alcohol and drug use that is then used to describe each relative. The numbered codes represent categories of substance use, ranging from 1 through 6: (1) alcoholic, (2) drug addict, (3) addicted to alcohol and drugs, (4) social user (defined as no problems experienced with substance use), (5) abstainer (never used), and (6) unknown. In order to assess heritability, there is a space for indicating whether or not one or both parents were biological, adopted, or step-.

Below the family tree is a checklist of common problems experienced by individuals who abuse alcohol and drugs: job problems, marital problems, substance use related arrests, blackouts, abusive (verbally and/or physically) while intoxicated, cirrhosis, treatment, 12-step group attendance, social disapproval, passed out, and daily use. The number of consequences checked were summed. The total was used in the present analysis as an indicator of the severity of substance abuse.

The test-retest reliability of the original self-report questionnaire was reported for both alcoholics and non-alcoholics such that the instrument reliably classified relatives as alcoholics or problem drinkers over a 2-week interval (Mann et al., 1985). The kappa values ranged from .78 to .94. The lowest value was obtained when respondents reported the drinking behavior of second degree

relatives. The authors concluded that the test-retest reliability of the SAFT appeared satisfactory for both clinical and research purposes (Mann et al., 1985).

Alcohol and Drug Use Questionnaire (ADUQ)

Additional substance abuse information was drawn from the Alcohol and Drug Use Questionnaire (ADUQ): age when first used alcohol, age when first became drunk, Quantity/Frequency Index (calculated from amount of alcohol consumed combined with the frequency of use), whether or not the respondent considered herself a problem drinker and/or drug addict, and intravenous injection of drugs. This instrument was developed at the Center for Alcohol and Drug Studies in Oklahoma City, Oklahoma, where it has been used to provide substance abuse data for a variety of samples and purposes.

Criminal History

Official criminal records obtained from the Oklahoma State Bureau of Investigation (OSBI) were obtained in July of 1997. OSBI personnel were provided with the identifying information (name, Department of Corrections identification number, and birth date) of the participants. They then obtained and copied each record.

These records were reviewed to gather data on the criterion variable, i.e., the presence or absence of an official record of a violent crime conviction. Violent crimes included homicide (murder and manslaughter), attempted homicide, all assaults, all robberies, rape, other sexual assaults, and child abuse. Conviction for

violent crimes were found for 83 (49.7%) of the 167 cases.

Procedure

Participants were recruited at MBCC through sign-up sheets, direct recruitment on the prison grounds, and through group presentations about the project. The instruments were administered in small groups ranging from 3 to 12 participants. The nature of the study was explained by the examiner and informed consent was obtained. Participation was voluntary. The examiner was present throughout the administration period to answer questions. Corrections policy prohibits inmates from receiving material compensation for participating in research projects, however, refreshments were served after the instruments had been completed.

In July, 1997, following the data collection at the prison, the outcome variable was derived from the official criminal records of the prisoners located at the Oklahoma State Bureau of Investigation (OSBI) (more above). These records were then compared to identifying information from the demographic questionnaire to assure that the record matched the individual who provided the prison data.

The dichotomous criterion variable was obtained by reading through the criminal record and noting the presence or absence of a conviction for violent crime. Some predictor variables were drawn directly from the data base, others were constructed from data base items. The predictor variables and their

construction are described in Appendix B.

Data Analysis

The original question guiding this study was to determine whether or not violent female offenders differ from nonviolent female offenders in meaningful ways. However, the present study does not address that broader question of significant differences between violent and nonviolent females, instead it focuses on the potential differences between those with and without a conviction for a violent crime. Any generalizations made from the present data to understanding the development of violent behavior in women are not supported by this data though the results may suggest fruitful lines of inquiry in the field of female violence. Nevertheless, these participants represent some of the most serious female criminal offenders, violent and nonviolent. As such, these results may enhance understanding the most serious female violent offending.

The question of group differences was answered indirectly, using stepwise logistic regression analysis to identify variables that strengthened the prediction of violent crime convictions in this group of female prisoners. Like multiple linear regression, logistic regression selects variables through an iterative process, assigning beta weights (β) to individual variables that maximize the prediction of the criterion variable. Thus, in this study, the selected individual variables were tested for significance in terms of their contributions to either increase or decrease the probability of membership in the group of female offenders with conviction(s)

for violent crime.

Logistic regression analysis was selected for this study because it permits simultaneous analysis of both dichotomous and continuous predictor and outcome variables (Hosmer & Lemeshow, 1989). The nature of the data, i.e., a mix of dichotomous and continuous variables, prohibited the use of tests of group differences like discriminant function analysis.

The ultimate goal of these analyses was to identify the variables that maximized the strength of prediction for convictions for violent crimes by constructing predictor models with logistic regression analyses. However, because logistic regression requires large sample sizes, one problem was evident immediately; there were too many variables of interest for the sample size. Logistic regression dictates relatively large sample sizes because the standard errors for maximum likelihood coefficients are large sample estimates (Wright, 1995).

Wright (1995) recommended a ratio of 50:1 cases per predictor variable. Some statisticians have asserted that this is overly conservative and recommended a ratio of 10:1 (Toothaker, 1998). The more liberal ratio of 10:1 was selected for this study. There were 167 cases in the present study, therefore approximately 16 variables could be entered into any one analysis. However, the actual number of cases differed across analyses because the number of missing responses for each variable differed across cases, depending on each unique set of variables entered

into the logistic regression procedure. Moreover, the actual number of cases available for each analysis was not known until the procedure was completed, often leading to the discovery that the required 10:1 ratio had been exceeded, i.e., more than 1 variable for every 10 cases. At that point, decisions were required to select variable(s) for exclusion.

When the ratio was exceeded, variable(s) were eliminated. This required a systematic decision hierarchy. Generally, the decision to exclude a variable was based on relative strength of statistical relationships calculated in preliminary analyses plus the maximum number of variables allowed. On the other hand, the decision to include a variable was based on theoretical predictions and/or findings from previous studies. Thus, the number of variables allowed was evaluated, set, and reported for each multivariate logistic regression procedure in the intermediate and final analyses.

The first task was to reduce the large number of potentially relevant variables. Approximately eighty variables of interest were initially derived from the data base. These were chosen because they could reflect influences that have been hypothesized to contribute to the development of violent behavior. Hence, the first task was to determine the statistical relationship between these variables and the criterion to provide preliminary information for guiding the selection process for subsequent analyses in order to ensure the appropriate variable to case ratio.

Consequently, there were three phases of data analysis: (1) univariate chi square (for dichotomous variables) and simple univariate logistic regression (for continuous predictor variables); (2) multivariate stepwise logistic regression analysis of primary conceptual groups; and (3) multivariate stepwise logistic regression analysis of final predictor models.

The first two phases of analysis were carried out for the primary purpose of reducing the number of variables to meet the requirements of logistic regression. Hosmer and Lemeshow (1989) recommended the use of initial univariate analyses to identify variables for subsequent analyses based on the strength evidenced in the statistical association. They further suggested using a relatively high p-value (.20 or higher) to assess significance in order to retain variables that may strengthen prediction in multivariate analyses. In other words, the variable may not be important alone, but contribute significantly to a prediction model in the presence of other variables.

The first phase was comprised of a series of univariate analyses using both chi square (for dichotomous variables) and logistic regression analyses (for continuous variables) that were conducted to eliminate variables that failed to exhibit a statistically significant association with violent crime convictions. Large p-values (χ^2 $p < 0.20$, logistic regression $p < 0.25$) were used to minimize the likelihood of eliminating important variables, as suggested by Hosmer and Lemeshow (1989). The results of these analyses guided subsequent decisions in

later steps when variables were identified for inclusion in logistic regression models to keep the number of variables within the recommended limits.

The results of the univariate analyses yielded twenty-four variables, still exceeding the limit of sixteen for this sample size. Therefore, the variables were again grouped conceptually for a second phase of analyses. This intermediate step consisted of a series of multivariate stepwise logistic regression analyses of the following groups of variables: parent, self, and socioeconomic. Each of these were subdivided to minimize the number of variables per analysis.

The parent group was subdivided into groups that referenced parental substance abuse, childhood memories of parenting, and other (parental criminality and a variable indicating whether or not the participant was raised by both of her biological parents). The self group was also subdivided into four categories: developmental variables, substance abuse variables, individual characteristics at the time of arrest for current crime (concurrent), and measures of depression and state anxiety at time of data collection. The socioeconomic group was divided into developmental and concurrent variables. The developmental social variables may have exerted influences during childhood and adolescence whereas the concurrent variables may have exerted more influences around the time of engaging in criminal activity. Childhood psychopathology was analysed separately because they were available for only 66 cases (more below).

The third and final phase of analysis built on the results of the preliminary

and intermediate analyses. The retained variables were used to construct three final predictor models for stepwise logistic regression analysis: a childhood/adolescent model, concurrent model, and comprehensive model. The childhood/adolescent model included all variables reflecting developmental influences that were related to violent crime convictions. Similarly, the concurrent model consisted of all variables that may have been exerting influences around the time period of the crime for which the participant was currently serving time (referred from here on as current crime). The comprehensive model was tested to look simultaneously at both developmental and concurrent variables.

All of the statistical analyses were carried out in the SAS/STAT System, Version 6 (Fourth Edition). The output of the logistic regression analyses carried out in SAS provides a wide variety of statistical results. These statistics can be classified into two general categories, model statistics that allow assessment of the whole model as it advances through successive iterations and those statistics that allow assessment of the performance of the independent variables within the final model. It was decided to report only those statistics that best addressed the research question of this study. Because there was an initial task of reducing the number of available variables to meet the requirements of logistic regression, only those statistics will be reported that bear directly on the goals of each specific stage.

Since the first two phases of analyses were carried out primarily to decrease

the overall number of variables, the statistics that will be reported will be those used as inclusion criteria. For the univariate chi square, the chi square statistic and its associated probability will be reported. For the logistic regression analyses, the variable's estimated coefficient (β), the standard error (S.E.), the Wald X^2 statistic, the significance level, and the odds ratio will be reported.

The goals of the analyses expanded in the third phase to building predictor models. Predictor models are evaluated in terms of goodness-of-fit which could have been evaluated in a variety of ways. Three options were explored to statistically evaluate the goodness-of-fit for the final predictor models: a generalized coefficient of determination (R-square), the Hosmer-Lemeshow goodness-of-fit statistic, and the 2 X 2 classification table. The first two were rejected in favor of the classification table. According to Hosmer and Lemeshow (1989), the R-square is an expression of the likelihood ratio test, not a measure of goodness-of-fit. The Hosmer-Lemeshow goodness-of-fit statistic requires a large enough sample size to include five cases per cell in a frequency table of each variable grouped by estimated probabilities. It is unlikely that the present data met this criteria. Consequently, the 2 x 2 classification table was chosen for its simplicity and intuitive appeal.

The 2 x 2 classification table summarizes the results of a fitted logistic model by cross-classifying the criterion variable with a newly constructed dichotomous variable whose values are obtained from the estimated probabilities,

providing a comparison of the observed events with the predicted events. This procedure yields a total percent of events that were correctly classified by the model. The statistics that will be presented for the final predictor models will add this measure of the predictive accuracy of the model, reported as percents obtained from a 2 x 2 classification table of observed versus predicted responses.

It is important to note here an important issue in the interpretation of logistic regression statistics. With logistic regression the substantive significance of the relationship between two variables is often assessed with the odds ratio and its corresponding 95% confidence interval. The odds ratio in logistic regression is the ratio of two conditional odds that can be interpreted directly indicating the increased or decreased probability of an event occurring within a specified set of circumstances (i.e., the predictor variables in the model).

The odds ratio estimates the change in the odds of membership in the target group per one-unit increase in the predictor variable. Odds ratios not equal to one indicate that there is a statistical association between the two variables. The further the odds ratio is from one, the stronger the association (Rodgers, 1995). When the predictor coefficient (β) is positive, the predicted odds increase as the predictor values increase; a negative coefficient (β) indicates an inverse relationship, i.e., the predicted odds decrease as the predictor increases; and an odds ratio of 1 means that the predicted odds are the same for any value of the

predictor variable.

Odds ratios indicate the increased or decreased probability of group membership associated with the corresponding predictor variable. Another way of describing predictor variables, often found in health-related research, is in terms of risk and protection. In this study, predictor variables exhibiting a significant odds ratio that is ≥ 2 can be called risk factors, whereas those with odds ratios $\leq .5$ can be called protective factors, in terms of their relationship to conviction for violent crime.

Thus a large part of the substantive significance of the logistic regression statistics is determined through assessing the odds ratio and 95% confidence interval. Two conditions are necessary for the odds ratio to be deemed substantively significant: (a) the magnitude of the odds ratio must be ≥ 2.00 for risk and ≤ 0.50 for protection; (b) the 95% confidence interval must not include the number one. The latter has been called the "crossing 1 rule", referring to the fact that if the confidence interval was placed on a number line, it would not include, or "cross", the number one. These conventions are followed, in part, to facilitate interpretation; an odds ratio of 2 indicates twice the risk and of .5 indicates half the risk.

For example, a logistic regression analysis yields an odds ratio of .245 for a specific predictor variable. The 95% confidence interval is calculated as (.765, .102). This would qualify as a protective factor, i.e. the odds ratio is less than .5 and the

confidence interval does not include the number 1. However, if the 95% confidence interval had been (1.001, .176), it crosses one and fails to qualify as a protective factor. If the interval crosses 1, the findings are difficult to interpret, because the values connote both risk (> 1) and protection (< 1). However, although a predictor variable fails to qualify as a risk or protective factor, it remains significant in terms of contributing to the prediction of the criterion variable.

Results

Demographic Variables

Tables 1 and 2 present descriptive characteristics of the sample. Nearly half (49.70%) of the sample had an official record of a violent crime conviction. Participants ranged in age from 19 to 58 years (S.D. 7.21), with a mean age of 31.01 years. The ethnic composition of the sample was as follows: 41.34% White; 41.92% African American; 2.39% Hispanic; 8.38% Native American; and 5.99% other ethnic groups. For purposes of subsequent analyses, the sample was divided into white and nonwhite racial categories.

Forty-three percent of the participants reported that they were employed at the time that they were incarcerated for the current crime. The mean number of years of education was 11.84 years. The mean age of the participants at the time that they were incarcerated was 27.70 years. The mean Hollingshead score was 28.08 (range 5 to 48, S.D. = 9.70), falling within the Hollingshead interval

associated with lower middle class occupations like machine operators and semiskilled workers (Hollingshead, 1975) .

Phase One: Preliminary Univariate Analyses

The univariate analyses were conducted with chi square for the dichotomous variables and logistic regression for the continuous variables. The variables in each kind of analysis were arranged to sort the data into meaningful groups: parent, self, and socioeconomic. The p-value for significance was set at .20 for the chi square and .25 for the logistic regression in order to retain important sources of influence as suggested by Hosmer and Lemeshow (1989).

Univariate Chi Square Analyses of Dichotomous Variables

Parent Variables

Table 3 presents the results of the chi square analyses. Initially, 20 parent variables were examined. These variables measured parental substance abuse, which parents were present during childhood, and parental criminality.

Of these, univariate chi square analyses revealed only four statistically significant ($p < .20$) relationships as shown in Table 3. There were two significant positive associations with conviction for violent crime for father's alcoholism ($p = 0.102$) specifically, and more generally for any kind of substance abuse by father ($p = 0.099$). Any kind of substance abuse refers to fathers who were identified as either alcoholic, drug addict, or abused both alcohol and drugs. Further, there were two significant negative associations with the criterion

variable. Unexpectedly, not being raised by both biological parents ($p=0.019$) was negatively associated with conviction for violent crime. However, the negative relationship between not knowing her father ($p=0.047$) and conviction for violent crime was not surprising. Thus, these four variables met criteria ($p=.20$) for inclusion in subsequent analyses.

Self Variables: Substance Abuse

Table 4 presents the results of the univariate chi square analyses of variables related to participants' substance abuse. Five of these 12 variables demonstrated significant statistical relationships with convictions for violent crime. Intoxication at time of crime ($p=0.005$), identifying self as a problem drinker ($p=0.121$), and alcoholism ($p=0.189$) as defined by the Quantity/Frequency Index (QFI) were positively associated with convictions for violent crimes. Self-reported alcoholism from the Substance Abuse Family Tree was also significantly associated with violent crime convictions; however, the cell count of 2 in the alcoholic/no conviction cell was too low to have confidence in the validity of the chi square test. On the other hand, drug addiction without alcoholism ($p=0.048$) as measured by the Substance Abuse Family Tree (SAFT) and drug abuse ($p=0.092$) as measured by the Alcohol and Drug Use Questionnaire (ADUQ) were negatively associated with convictions for violent crimes. Thus five variables met criteria for inclusion in subsequent analyses.

It is important to clarify here the relationship between intoxication and the

criterion variable, i.e. official record of a violent crime. This does not necessarily mean that the offender was intoxicated at the time of the violent crime, because the reference crime for intoxication is the crime for which she was serving time, not the criterion variable which was obtained later from an official record. In order to specifically address the issue of increased risk for violent behavior while intoxicated, a special analysis was conducted. It is reported below, following the report of results of the main analyses.

Self: Developmental and Concurrent

The results of the analyses of developmental and concurrent variables are presented in Table 5. There were six of these variables: physically abused as child, sexually abused as child, premature pregnancy (≤ 14 years), previous incarcerations, has/had children, and under twenty-one years old at time of crime. Four out of six of these variables exhibited statistically significant relationships with convictions for violent crime. These univariate chi-square analyses yielded two positive associations for being sexually abused as a child ($p=0.006$) and for being under twenty-one years old at time of crime ($p=0.001$) and two negative associations for previous incarcerations ($p=0.001$) and has/had children ($p=0.026$). Thus, these four variables met criteria for inclusion in subsequent analyses.

Socioeconomic Variables

The results of this analysis are also presented in Table 5. Six socioeconomic variables were examined. Two of the six socioeconomic variables were

significantly related to convictions of violent crimes: one positive association for serious impoverishment ($p=0.193$) and one negative association for being nonwhite ($p=0.139$). These two variables met criteria for entry into subsequent analyses.

Univariate Logistic Regression Analyses of Continuous Variables

The results of the univariate logistic regression analyses are presented in Table 6. Several continuous variables of interest were entered into univariate logistic regression analyses to identify variables for subsequent multivariate logistic regression analyses. As recommended by Hosmer and Lemeshow (1989), the p -value was set high at $p < .25$.

Parent: Childhood Memories of Parenting (EMBU)

The Childhood Memories of Parenting (EMBU) has four scales: rejection, warmth, favors subject (compared to siblings), and overprotection. For each scale three separate scores can be analyzed: total score, father's score, and mother's score. The total score is obtained by adding the two parent scores. Thus there were twelve variables derived from the EMBU.

The univariate logistic regression analyses of the parenting variables produced two positive associations with conviction for violent crime for the total rejection score ($p=0.1035$) and the father rejection score ($p=0.1172$), thus these two variables were included in subsequent analyses. These results are reported in Table 6.

Self: Substance Abuse Variables

Three continuous self substance abuse variables were initially examined. Of these only the alcohol Quantity/Frequency Index ($p=0.1036$) was positively associated with conviction for violent crime, thereby meeting criteria for entry into subsequent analyses. The results are shown in Table 6.

Self: Psychological Symptom Variables

The univariate logistic regression analyses of two variables measuring depressive symptoms and state anxiety at time of data collection revealed one positive association between depressive symptoms (Beck Depression Inventory; $p=.0017$) and conviction for violent crime. This variable met inclusion criteria for subsequent analysis. This result is shown in Table 6.

Self: Developmental Variables

Seven continuous developmental variables were initially analyzed. Three of the seven developmental variables were found to have statistically significant relationships with violent crime convictions: age at time of incarceration ($p=0.0151$), attention deficit hyperactivity disorder ($p=0.1383$), and conduct disorder ($p=0.1237$). Age at time of incarceration was included in subsequent analyses. The variables reflecting childhood behavior disorders could not be used in later analyses because of the small number of cases ($n=66$) available for study. These results are shown in Table 6.

Socioeconomic Variables

The univariate logistic regression analyses yielded no significant associations between either Hollingshead Index (socioeconomic status; $p = .8420$) or years of education ($p = .6956$) with conviction for violent crime. Thus, these variables were eliminated from further study.

Summary of Univariate Analyses

These analyses provided preliminary data regarding the nature of the relationships between the larger original set of variables and conviction for violent crime. Approximately 50 variables failed to meet inclusion criteria, with 23 significant relationships found, still exceeding the number allowed to build predictor models with logistic regression.

Statistically significant positive associations were found for 15 variables: paternal alcoholism, paternal substance abuse of any kind, intoxication at time of crime, identification of self as problem drinker, alcoholism as defined by total Quantity/Frequency Index (QFI) score (a dichotomous variable), total QFI score (a continuous variable), having been sexually abused, age younger than 21 years old, serious impoverishment, total parental rejection score, total father rejection score, total years of alcohol abuse, total score on the Beck Depression Inventory, attention deficit hyperactivity disorder, and conduct disorder. The positive direction of the relationship suggests that these variables increase risk for conviction of violent crime.

Statistically significant negative associations with violent crime convictions were found for eight variables: not being raised by both biological parents, not knowing father, drug addiction, drug abuse, previous incarcerations, has/had children, nonwhite racial status, and age at time of incarceration. These variables may decrease risk for violent crime conviction.

These results were used to decide which variables to eliminate from the final predictor models when the available number of relevant variables exceeded the maximum number of variables permitted. However, a few variables that failed to demonstrate a significant relationship with conviction for violent crimes in the univariate analyses may have been included in subsequent analyses because of potential interaction effects with other variables (Hosmer & Lemeshow, 1989). Again, in general, the decision to exclude a variable was based on the maximum number of variables allowed whereas the decision to include a variable was based on theoretical predictions and/or findings from previous studies.

Phase Two: Intermediate Multivariate Logistic Regression Analyses

As reported above, the preliminary analyses yielded too many variables for analysis with a sample size of 167 cases. Thus, the goal of this phase continued to be the reduction of the number of variables to be included in the final logistic regression predictor models. To accomplish this, the variables were again grouped into conceptually meaningful categories that created sets, permitting analysis of all of the variables retained during the univariate analyses.

The group sets included parent, self, and socioeconomic. The parent group was further subdivided into parental substance abuse, parenting (Childhood Memories of Parenting, or EMBU), and other parent variables, i.e., not being raised by both biological parents and parental criminality. Self categories included substance abuse, developmental, concurrent (at time of current crime), and psychological symptoms at time of data collection (Beck Depression Inventory and State Anxiety Scale). Socioeconomic categories included developmental and concurrent (at time of current crime).

In this study, the permitted number of variables varied across analyses because the sample sizes were dependent on the number of missing values. Though the outcome variable is available for 167 cases, many of the predictor variables have different amounts of recorded values because of missing data created when the participant left a response blank or when a response was undiscernible. SAS throws out the missing values leading to differences in the sample size for each analysis. The sample size is reported for each procedure.

The goal of these intermediate analyses once again is to reduce the overall number of variables for the final predictor models. Therefore, the statistics reported are limited to those that bear directly on selecting variables to enter into those logistic regression models: Wald χ^2 and its associated probability; the odds ratio and its associated 95% confidence interval (also reported at this stage because it provides additional information about the direction of relationship between the

predictor and criterion variables); beta weight (β ; also known as the parameter estimate or coefficient); and standard error ($S.E.$).

The results reported for the final predictor models will add a goodness-of-fit measure, i.e., 2 x 2 classification tables that compare the predicted and observed events.. Goodness-of-fit statistics will only be reported for the final predictor models, but not for the earlier analyses carried out to select variables for the final predictor models. Though well suited to selecting variables, the earlier analyses were seriously flawed as predictor models because each set of variables lacked the wide range of influences known to impact the development of violent behavior. Thus the earlier "models" would not be expected to work well as predictor models, rendering goodness-of-fit measures less meaningful.

Parent Variables: Substance Abuse, EMBU, and Other

There were 25 variables derived from the data base that related to parental characteristics. Each was conceptualized as a developmental influence. The variables were categorized to reduce the numbers of variables entered into each analysis and to examine conceptually distinct (e.g., parental alcoholism versus parental rejection) sources of influence. The groups included substance abuse, EMBU, and other (not raised by both biological parents and parental criminality).

Parental Substance Abuse (N=167)

The parental substance abuse variables included data about parental alcoholism, drug addiction, and a combined alcohol and drug addiction. These

participants reported mothers' substance abuse as follows: 16.17% alcoholic, 2.99% drug addicted, and 14.37% addicted to both alcohol and drugs. They reported greater substance abuse among their fathers: 35.93% alcoholic, 1.20% drug addicted, and 17.96% addicted to both alcohol and drugs. More generally, 56.29% reported fathers and 34.73% reported mothers with any type of substance abuse problem. The cases representing participants reporting that both of their parents were addicted included: 23.35% both addicted (alcohol and/or drugs), 8.98% both alcoholic, 0% both drug addicted, and 5.99% both addicted to alcohol and drugs.

Fifteen parental substance abuse variables were analyzed. The stepwise logistic regression analysis of parental substance abuse variables yielded two statistically significant relationships shown in Table 7. There was a positive association between father abused alcohol and/or drugs ($p=.0693$) and convictions for violent crime. This variable demonstrated a modestly strong relationship with conviction for violent crimes, but failed to qualify as a risk factor. Interestingly, the opposite was true for mothers; there was a negative association between mother abused alcohol and/or drugs ($p=.2276$) and conviction for violent crime. It too failed to qualify as protective. Both of these variables were later entered into final predictor models. It is noteworthy that the variables representing cases in which an individual reported that both parents had a substance abuse problem of some kind failed to exhibit a significant relationship to convictions for violent crimes.

EMBU Variables (Childhood Memories of Parenting: N=155)

Eight EMBU variables were examined using the stepwise logistic regression procedure. Results revealed three significant positive associations with convictions for violent crime for father's rejection ($p=.0118$), mother's rejection ($p=.1924$), and mother's warmth ($p=.0847$). There was one significant negative association between father's overprotection ($p=.0980$) and conviction for violent crimes. These relationships were weak, i.e., small values for odds ratios with 95% confidence intervals that hover around the value one, indicating that they are not risk or protective factors for convictions for violent crime. The results are shown in Table 7. These four variables were subsequently used to build final predictor models.

Other Parent Variables: Parental Criminality and Not Raised by Both Biological Parents (N=167)

Two other parent-related variables were studied, parental criminality and not raised by both biological parents. Parental criminality did not yield a significant relationship with convictions for violent crime as expected. However, the stepwise logistic regression produced a significant negative relationship between having not been raised by both biological parents and conviction for violent crime. The statistics indicate that this variable demonstrated a strong negative relationship with conviction for violent crimes such that it may significantly decreased the likelihood of a violent crime conviction. It was later

used to build final predictor models. The significant findings are shown in Table 7.

Self Variables: Substance Abuse, Developmental, Childhood Psychopathology, Concurrent, and Psychological Symptoms

There were thirty-two self variables derived from the data base that could have been related to convictions for violent crime. These were divided into conceptual categories: substance abuse, developmental (characteristics that impact development), childhood psychopathology (Childhood Questionnaire scales attention deficit hyperactivity disorder, learning disorder, and conduct disorder), concurrent (individual characteristics operating at time of current crime), and psychological symptoms (depression and state anxiety at time of data collection).

Self Substance Abuse (N=117)

Fifteen variables were initially analyzed relating to participants' substance abuse history, exceeding the limit for an analysis of 117 cases. Therefore, they were subdivided into alcohol and drug groups to keep the number of variables under eleven.

The stepwise logistic regression analysis of alcohol variables yielded two significant positive associations. As shown in Table 8, both intoxication at time of crime ($p=.0056$) and self-reported alcoholism ($p=.1993$; Substance Abuse Family Tree or SAFT) were significantly related to conviction for violent crime. Intoxication at time of crime qualified as a risk factor, but alcoholism did not.

These two variables were subsequently used to build a final predictor model.

The stepwise logistic regression analysis of four drug abuse variables yielded one significant negative association between self reported drug addiction ($p=.0347$; from the SAFT) and conviction for violent crimes. The results shown in Table 8 indicated that drug addiction decreased the likelihood of conviction for violent crime. This variable was subsequently entered into final predictor models.

Self: Developmental Variables (N=131)

These results are shown in Table 9. Eight variables conceptualized as potentially influential developmental problems were included in the analyses. The childhood psychopathology variables were analyzed separately because of the low sample size. They are discussed below.

The stepwise logistic regression analysis yielded one significant positive relationship between having been sexually abused ($p=.0892$) and conviction for violent crime. Further, there were two significant negative associations between conviction of a violent crime and both estimated WAIS-R ($p=.1905$) and age when first used alcohol ($p=.1157$). None of these relationships met statistical criteria for classification as a risk or protective factor. All were subsequently used to build final predictor models.

Childhood Psychopathology (N=66)

The Childhood Questionnaire was available on a subset of 66 cases. Analysis of this subset permitted study of the hypothesized effects of childhood

behavior disorders on the development of criminally violent behavior. The three scales provided continuous measures of attention deficit hyperactivity disorder, learning disorder, and conduct disorder. As shown in Table 9, the stepwise analysis yielded one significant positive association between conduct disorder ($p=.1287$) and conviction for violent crime. Unfortunately, conduct disorder could not be used to build final predictor models because it would have seriously limited the number of variables that could have been entered into the logistic regression analyses.

Self: Concurrent Variables (N=150)

Eleven self variables were identified that represent individual characteristics that could have exerted their effects on the individual's behavior around the time of committing crimes. Five of these variables demonstrated a significant association with conviction of violent crime.

As shown in Table 9, the stepwise logistic regression procedure revealed three significant positive associations for intoxication at time of crime ($p=.0056$), alcoholism ($p=.2119$), and age younger than 21 years old at time of crime ($p=.0296$). Both intoxication at time of crime and age younger than 21 years demonstrated strong enough relationships with conviction for violent crime to qualify as risk factors. In addition, the analysis yielded two significant negative relationships between conviction for violent crime and both previous incarcerations ($p=.0005$) and drug addiction ($p=.0597$). Previous incarcerations

qualified as a risk factor. However, neither drug addiction nor alcoholism qualified as protective or risk factors, respectively.

Self: Psychological Symptoms

There were two instruments (Beck Depression Inventory and State/Trait Anxiety Inventory: State Form) administered during data collection that provided two variables reflecting contemporaneous psychological symptoms: depressive symptoms and state anxiety. The stepwise logistic regression analysis of these variables produced a significant positive relationship with depressive symptoms ($p=.0018$) and conviction for violent crime. Conversely, anxiety ($p=.2495$) was significantly and negatively related to convictions for violent crime. As shown in Table 9, these were weak but significant predictors of conviction for violent crimes. Both variables were subsequently included in the final predictor models.

Socioeconomic Variables

There were a total of eleven socioeconomic variables derived from the data base. In order to identify socioeconomic variables that could have influenced development to be included in the final child/adolescent predictor model, the socioeconomic variables were divided for analysis into developmental and concurrent categories.

Socioeconomic Variables: Developmental (N=163)

The stepwise logistic regression analysis yielded no significant relationships between conviction for violent crime and variables conceptualized as social

influences on development, e.g., parental criminality, criminal relatives, etc. All failed to demonstrate significant relationships with convictions for violent crimes. However, the negative association between race and conviction for violent crimes approached significance ($p=0.2503$), indicating that nonwhite racial status tended to reduce risk for conviction of violent crime. However, in this analysis the associated 95% confidence interval of the odds ratio indicated that it failed to meet criteria as a protective factor for violent crime convictions. Nevertheless, it was included in subsequent analyses for two reasons: it approached significance, and race has been identified as an important social variable in criminological research.

Socioeconomic Variables: Concurrent (N=164)

Eight variables that could have potentially exerted concurrent effects on participants' criminal behavior were included in a stepwise logistic regression analysis. Results of the analysis revealed two positive associations with conviction for violent crimes: age younger than 21 years old ($p=.0374$) and serious impoverishment ($p=.2305$). Though being younger than 21 years old qualified as a risk factor, the odds ratio for serious impoverishment failed to meet substantive significance. Conversely, the analysis yielded one negative association for previous incarcerations ($p=.0001$) and met criteria as a protective factor against convictions for violent crime. These results are shown in Table 10. These three variables were later entered into the final predictor models.

Phase Three: Final Predictor Models

Final prediction models were built with the variables demonstrating significant associations with conviction for violent crime during the preliminary and intermediate analyses. Those variables were organized into models representing influences of childhood/adolescent factors, concurrent influences, and a combination of those two, building a comprehensive model. Combining parent variables with developmental self variables provides a picture of important childhood and adolescent developmental risk or protective factors for violent crime conviction. The p-value was lowered to $p < .15$ for these predictor models to strengthen confidence in the statistical significance of the relationships. The separate examination of developmental and concurrent models allowed exploration of potential risk factors for convictions for violent crime that can inform prevention efforts that specifically target children or adults.

Child/Adolescent Predictor Model (N=126)

Ten variables were entered into a stepwise logistic regression analysis of all significant developmental variables: (a) having not been raised by both biological parents, (b) being sexually abused, (c) any kind of fathers' substance abuse, (d) any kind of mothers' substance abuse, (e) fathers' rejection, (f) mothers' rejection, (g) mothers' warmth, (h) fathers' overprotection, (i) estimated WAIS-R, (j) age when first used alcohol, and (k) race.

This analysis yielded two significant findings for the variables representing

sexual abuse and having not been raised by both biological parents. A history of being sexually abused displayed a significant positive association with conviction for violent crime and history ($p=.0395$). Evaluation of the odds ratio and 95% confidence interval provides evidence indicating that this variable is a risk factor for conviction of violent crime. Although this analysis yielded a significant negative association between violent crime conviction and not being raised by both biological parents ($p=.0987$), it did not qualify as a protective factor. These results are shown in Table 11.

As mentioned above, three alternatives were explored to statistically evaluate the goodness-of-fit for the final predictor models: a generalized coefficient of determination (R-square), the Hosmer-Lemeshow goodness-of-fit statistic, and a 2 x 2 classification table. The 2 x 2 classification table with the resulting percent accuracy rate was selected largely for its simplicity and intuitive appeal. This procedure yielded a total percent of events that were correctly classified by the model. For the child/adolescent model, 59.17% of the observed events were correctly classified. Table 12 displays these results.

These findings suggest that the most important developmental influences that were captured in these analyses, contributing to prediction of violent crime conviction, were the increased risk associated with a history of being sexually abused and the decreased risk associated with having not been raised by both biological parents. The latter finding may seem counter intuitive. Possible

explanations for these findings will be addressed in the discussion section.

Concurrent Predictor Model (N=161)

These results are displayed in Table 13. Eight variables were selected for analysis in a model examining correlates of violent crime convictions that exerted influences contemporaneous to the crime for which participants were incarcerated (current crime). These included (a) age younger than 21 years old at time of current crime, (b) previous incarcerations, (c) intoxication at time of crime, (d) drug addict, (e) depressive symptoms at time of data collection, (f) symptoms of anxiety at time of data collection, (g) seriously impoverished, and (h) alcoholism (Substance Abuse Family Tree).

This analysis of significant concurrent variables generated six significant relationships with violent crime conviction. The positive associations that indicate increased risk included age younger than 21 years at time of current crime ($p=.0492$), intoxication at time of current crime ($p=.0030$), and depressive symptoms ($p=.0008$) at time of data collection. The three significant negative associations that indicate reduced risk included previous incarcerations ($p=.0001$), drug addiction ($p=.0998$), and anxiety symptoms ($p=.1301$) at time of data collection.

Both being younger than 21 years old and intoxication at time of crime qualified as risk factors in this analysis of concurrent variables. Similarly, previous incarcerations qualified as a protective factor. The depressive symptoms,

drug addiction, and anxiety failed to meet criteria for risk or protection. This final concurrent predictor model correctly classified 76.62% of the observed events, revealing that the concurrent model improved prediction of violent crime compared to the developmental model (59.17%). These results are displayed in Table 14.

These findings indicate that the most salient concurrent predictors of violent crime conviction included variables reflecting youth, criminal history, substance abuse, and the tendencies to develop psychological symptoms while incarcerated. Interestingly, different kinds of substance abuse characteristics provided differential effects on the criterion variable. These results will be discussed below.

Comprehensive Predictor Model (N=151)

These results are displayed in Table 15. A total of fifteen variables were analyzed to look at the full spectrum of significant variables derived from the data base: (a) father's substance abuse (any kind), (b) mother's substance abuse (any kind), (c) not raised by both biological parents, (d) rejection by father, (e) rejection by mother, (f) sexually abused, (g) drug addiction, (h) intoxication at time of crime, (i) alcoholism (SAFT), (j) previous incarcerations, (k) age younger than 21 years at time of crime, (l) depressive symptoms and (m) anxiety symptoms at time of data collection, (n) race, and (o) seriously impoverished. This model took into account both concurrent and developmental influences in order to build a

comprehensive predictor model that could be useful for understanding adult female offenders.

The stepwise logistic regression analysis of all significant variables generated a total of eight statistically significant relationships. There were three significant positive associations with convictions of violent crime which included intoxication at time of crime ($p=.0004$), age younger than 21 years at time of crime ($p=.0164$), and depressive symptoms ($p=.0029$) at time of data collection. The five significant negative associations included mothers' abuse of alcohol and/or drugs ($p=.0507$), having not been raised by both biological parents ($p=.0276$), drug addiction ($p=.0577$), previous incarcerations ($p=.0001$), and anxiety symptoms ($p=.1301$) at time of data collection.

In the comprehensive model, evaluation of the odds ratios and 95% confidence intervals for the statistically significant relationships indicated that intoxication at time of crime and age younger than 21 years at time of crime increased risk for convictions of violent crime. On the other hand, having not been raised by both biological parents and previous incarcerations reduced risk of conviction for violent crime. These results are shown in Table 15.

This most comprehensive analysis yielded the highest accuracy, correctly classifying 77.81% of the cases (Table 16). The results indicate that the most salient influences for predicting violent crime conviction in adult female inmates included mothers' substance abuse, whether or not one was raised by both

biological parents, substance abuse by the individual, criminal history, age, and the tendency to manifest psychological symptoms while imprisoned. As noted before, various kinds of substance abuse produce differential effects on the criterion variable, e.g., intoxication increased risk whereas drug addiction decreased risk, indicating a complex relationship between substance abuse and violent crime convictions.

Special Analysis: Intoxication and Violent Crime

This section addresses the issue of a direct relationship between intoxication and the increased risk for committing a violent crime. As indicated in the previous analyses, there was a significant relationship between intoxication at time of current crime and an official record of a violent crime. However, those analyses did not necessarily address the relationship between the effects of intoxication and criminally violent behavior. As mentioned above, these main analyses tested the relationship between the criterion variable, i.e., an official record of a conviction for violent crime, and the predictor variable that assessed the presence or absence of intoxication at the time of the current crime. The criterion, conviction for violent crime, was not necessarily the crime referred to by the participants when they responded to the question of whether or not they were intoxicated when they committed the crime for which they were currently serving time. Therefore, to directly assess the effects of intoxication on violent crime, a special set of analyses were conducted. These results are displayed in

Table 17.

In order to measure the relationship between intoxication and violent crime, a new dichotomous variable was constructed from the categorical variable that identified the offense for which the respondent was serving time, drawn directly from the prison data base. The primary offense variable referred to the current crime and categorized the offense by type: violent, property, and drug. The new variable was named violent crime. This allowed direct analysis of the relationship between intoxication and self-reported violent crime.

A comparison of the violent crime variable to the official record of violent crime convictions indicated that there were six fewer cases of current violent crime than conviction for violent crime. In other words, six participants with violent crime conviction by official record reported that their current incarceration was for a nonviolent crime. On the other hand, eight participants reported that they were serving time for violent crimes but did not have an official record of a violent crime.

The univariate and multivariate stepwise logistic regression analyses of the relationships between intoxication and violent crime yielded similar results to those found for the variable conviction for violent crimes. The results, shown in Table 17, provide evidence that this set of analyses yielded comparable results to the previous analyses of this study. Therefore, intoxication at time of current crime demonstrated a similar degree of risk in the analyses of self-reported violent

crime as it did for official record of conviction for violent crime. The similarity between results is probably due to a large overlap between current violent crime and an official record of a violent crime conviction, i.e., most of the violent offenders were serving time for the violent crime found in the official record.

Summary of Results

The final stepwise logistic regression models produced several statistically significant relationships with conviction of violent crime. Although a variable exhibited a statistically significant relationship as a predictor of the criterion variable, it may or may not have qualified as a risk or protective factor. That determination was made by assessing the odds ratio and corresponding 95% confidence interval, i.e., the odds ratio is ≥ 2 (risk) or $\leq .5$ (protection) and the 95% confidence interval does not include the number one. Risk and protective factors will be discussed as such. Those that failed to meet these criteria will be discussed as increasing or decreasing the likelihood of membership in the violent crime conviction group.

The childhood/adolescent model demonstrated that being sexually abused is a childhood/adolescent risk factor for subsequent conviction of a violent crime. Conversely, if a participant was not raised by both biological parents there was a decreased likelihood of a violent crime conviction, though in this model the variable did not meet criteria as a protective factor as it did in the comprehensive predictor model.

Concurrent risk factors included being younger than 21 years old and being intoxicated at time of current crime. Depressive symptoms at time of data collection increased the likelihood of membership in the violent crime group. On the other hand, a history of previous incarcerations qualified as a protective factor. Anxiety at time of data collection and drug addiction decreased the likelihood of membership in the violent crime group.

The comprehensive model produced two risk factors: intoxication at time of current crime and age younger than 21 years old at time of current crime. The depressive symptoms at time of data collection also increased the likelihood of membership in the violent crime group. On the other hand, it yielded two protective factors: not being raised by both biological parents and previous incarcerations. Similarly, participants reporting mothers with any kind of substance abuse, their own drug addiction, and anxiety symptoms at time of data collection were less likely to have a conviction of a violent crime.

The comprehensive (77.81%) and concurrent models (76.62%) were more accurate than the childhood/adolescent model (59.17%). This is consistent with expectations based on theory, i.e., that time attenuates the effects of developmental risk factors for violence. Most aggressive children do not become aggressive adults. Most of the results of this study were consistent with previous research, though there were a few surprises. These results, along with implications for future research, prevention, and treatment planning are discussed

in the next section.

Discussion

The primary goal of this study was to determine whether or not various risk and protective factors for violence, identified from previous studies, would aid the prediction of conviction for violent crime. It was suggested that the predictor variables that would increase risk for an official record of a conviction of violent crime included: (a) parental substance abuse, (b) parental rejection, (c) substance abuse by the individual, (d) lower intelligence, (e) serious impoverishment, and (f) sexual abuse. On the other hand, those predictor variables that would decrease risk for conviction of violent crime included: (a) higher socioeconomic status, (b) higher intelligence, and (c) parental warmth. The role of childhood physical abuse is not yet clear, though previous research suggested that the long-term effects of physical abuse for women differ from those for men in terms of increased risk for violent offending (Rivera & Widom, 1990). This discussion will first address the results for each of these variables within their respective conceptual groupings, then proceed to a discussion of the results of the final predictor models.

Parent Variables

All of the parent variables were conceptualized as influencing the development of the participants. It had been speculated that parental rejection, parental substance abuse, and parental physical abusiveness would be significantly

more prevalent in the violent crime group whereas parental warmth would be more prevalent in the group without violent crime convictions. Of these, only mothers' substance abuse of any kind was a significant predictor ($p < .15$) of conviction for violent crime in the final models. Surprisingly, not being raised by both biological parents (originally included to assess parental rejection) was also a significant predictor, qualifying as a protective factor, for conviction of violent crime.

For this discussion, the parent variables were subdivided into conceptual groups, similar to the way they were organized for the analyses. The groups include parental childrearing characteristics, parental substance abuse, domestic violence, and parental criminality.

Parental Childrearing Characteristics

The Childhood Memories of Parenting instrument provided measures of participants' memories of how they were parented by both mother and father. Though fathers' rejection, fathers' overprotection, and mothers' warmth were significant in the preliminary and intermediate analyses, all lost significance in the final predictor models. The positive relationship found in the preliminary and intermediate analyses between parental rejection and violent crime is consistent with previous findings that parental rejection increases risk for violent offending (Rutter, 1987). Parental rejection interferes with a positive parent-child attachment which is necessary for the development of healthy self-control

(Gottfredson & Hirschi, 1990), a central tenet of control theory.

These findings are consistent with the theoretical model that guided this study, a biopsychosocial developmental perspective that integrates social learning and control theories (Klassen & O'Connor, 1994; Patterson, DeBaryshe, & Ramsey, 1989). The initial significance displayed in the preliminary and intermediate analyses indicate that the adverse effects of parental rejection and overprotection and the positive effects of parental warmth are important markers for tracking the early development of criminally violent behavior during childhood, although they did not significantly contribute to a final predictor model for adult criminal violence. The lack of a statistically significant association in the final models may reflect the kind of measurement issue described by Laub and Lauritsen (1993), whereby a risk marker like parental rejection in childhood develops over time into other more salient correlates of violence, such as substance abuse or depressive symptoms, that are present at the time of measurement but not necessarily assessed (Laub & Lauritsen, 1993; Sameroff, Seifer, Baldwin, & Baldwin, 1993).

The dichotomous variable assessing whether or not the participant was raised by both biological parents was originally intended to add to the measurement of parental rejection. It was assumed that individuals not raised by both biological parents were more likely to experience some kind of parental rejection, thereby increasing the likelihood of violent behavior and conviction for

violent crime. However, the opposite effect was found. Without additional information about the history of the family-of-origin, implications can only be drawn from this finding with considerable caution. However, this provocative finding begs speculation.

This specific result suggests that the item regarding whether or not the individual was raised by both biological parents tapped something other than parental rejection. It has been shown that chronic family disorganization is a risk factor for a variety of adverse outcomes in adulthood including violent crime (Hawkins, 1995; Reiss & Roth, 1994). Perhaps this variable detected the protective effects found in families-of-origin that have reorganized at a more functional level by splitting from an especially dysfunctional parent through divorce or separation.

Since having not been raised by both biological parents was consistently significant in all analyses, emerging as a protective factor in the comprehensive final predictor model, this finding points to family organization variables as an important area for additional study. Social policy tends to run to one of two extremes at any given time regarding the treatment of troubled families. Interventions focus on either keeping the family together or breaking them up no matter what the cost. Policies that avoid a "cookie cutter" approach by promoting sensitive, case by case, interventions and treatment goals may be more expensive in the short term, but save much more in terms of the long term consequences of

those children and their future families.

Parental Substance Abuse

Of all the parental substance abuse variables, only mothers' substance abuse of any kind was retained in the final comprehensive predictor model. However, contrary to expectations, rather than increasing the likelihood of participants' conviction for violent crime through the hypothesized mechanism of increasing family dysfunction, mothers' substance abuse decreased the likelihood of membership in the conviction of violent crime group. The clinical significance of this finding is not clear without additional information. For instance, the available data does not specify whether or not the participant lived with her mother. One likely explanation for this significant relationship could be the tendency for these female offenders to learn and use the same maladaptive coping strategies, i.e., substance abuse, as their mothers, thereby increasing the probability of a conviction for a drug crime rather than a violent crime. However, additional study would be required to explore that possibility.

Interestingly, cases in which both parents abused alcohol and/or drugs, situations in which family dysfunction might be compounded, did not contribute to the prediction of violent crime convictions. If individual self-control develops within the parent-child relationship and both parents' interactions with the child are affected negatively by substance abuse, then the development of self-control should be greatly undermined. Furthermore, if self-control is an individual

characteristic that determines the baseline propensity for violent behavior, then lower levels of self-control should predict convictions for violent crime.

Nevertheless, the simplest explanation for this finding may be that when both parents were addicted, there was increased risk for becoming an addict, which in turn increased the probability for being incarcerated for nonviolent drug crimes.

Domestic Violence

The only variable derived from the prison data base that reflected domestic violence, an important risk factor for violent crime, was the physically abused variable constructed from EMBU items. It is discussed below under the heading "Participants' History of Childhood Physical Abuse".

Parental Criminality

Contrary to what was expected, the measure of parental criminality did not demonstrate a significant relationship with conviction for violent crimes.

Parental criminality had been identified as a risk factor for violent crime in male populations (Lewis et al., 1979; Reiss & Roth, 1994), suggesting another possible difference in the pathways to violent crime traversed by men and women. Only 13.8% of the sample reported parental criminality. The large number of women incarcerated for nonviolent drug crimes, representing the fastest growing inmate population, may have reduced the proportion of women in this sample with a history of parental criminality. However, the interactions between parental criminality, substance abuse, and current crime were not analyzed.

Self Variables

Several person-centered variables demonstrated significant associations with conviction for violent crimes. In the final predictor models, the positive associations with conviction of violent crime were with having been sexually abused, conduct disorder (in the limited analysis of CQ variables), depressive symptoms at time of data collection, intoxication at time of current crime, and age younger than 21 years old at the time of the current crime. Those that met the additional criteria for qualifying as risk factors were age younger than 21 years old at time of crime, intoxication at time of current crime, and a history of being sexually abused. Negative associations with conviction of violent crime were found for not having been raised by both biological parents, previous incarcerations, self-drug addiction, anxiety symptoms at time of data collection, and mothers' substance abuse. Only previous incarcerations and having not been raised by both biological parents met the additional criteria for protection.

Self: Alcohol and Conviction for Violent Crime

Although various measures of self-reported alcoholism were significantly and positively associated with conviction for violent crime in the preliminary and intermediate analyses, none of these emerged as significant in the final predictor models. Although alcoholism demonstrated only limited significance in this study, intoxication was a reliable predictor of violent crime conviction. The

relationship between alcohol abuse, alcoholism, and violent crime remains to be clarified.

The present findings are consistent with those reported by Collins and colleagues (Collins, Schlenger, & Jordan, 1988) whereby chronic alcohol effects were not significantly associated with violent crime in a male-only sample. In the present study, to assess chronicity of alcohol abuse, a dichotomous variable labelled chronic was constructed from two variables available in the data base. A positive case represented frequent (≥ 5 times per week), long term ($\geq$ four years) alcohol abuse. It was not related to conviction for violent crimes, suggesting that chronic alcohol abuse is also not a predictor of violent crime in women. White and Hansell (1996) reported data suggesting that the nature and direction of the relationship between alcohol use, aggression, and alcohol-related aggression over time are moderated by gender. They found that prior alcohol use was a better predictor of alcohol-related aggression for females, whereas prior aggression is a better predictor for males (White & Hansell, 1996).

The role of alcohol abuse and violent crime is not yet fully explicated. There are several possible pathways between alcohol abuse and criminally violent behavior: pharmacological, lifestyle correlates, and comorbid mental disorder. Blankfield (1991) found that violent crimes were more common in alcoholic offenders compared to other criminals. Moreover, these alcoholic violent offenders had histories of aggressive traits predating their alcohol abuse.

However, McCord (1981) emphasized the greater role played by adverse backgrounds than alcohol abuse, noting that the histories of criminal alcoholics are more similar to other criminals than to noncriminal alcoholics.

Age when first used alcohol was conceptualized as a developmental variable that might contribute to the development of violent behavior. It failed to meet significance in all analyses except one, displaying a modest effect in the intermediate childhood/adolescent model. However, it lost significance in the more complex final predictor models.

Intoxication at time of crime is a strong, stable predictor of violent crime. Previous research clearly established acute intoxication as a risk factor for violent behavior in both men and women (Roth, 1994; Tedeschi & Felson, 1994; Whaite & Hansell, 1996). The relationship is hypothesized to be the result of the psychophysiological effects of alcohol. Alcohol intoxication leads to behavioral disinhibition, decreased verbal fluency, and reduced abstract reasoning. These effects reduce the number of nonviolent strategies available for coping with interpersonal conflict, thereby increasing the likelihood of violent behavior (Blumstein, 1995; Miczek et al. 1994). These effects contribute to the alcoholic myopia described by Steele and Joseph (1990), that explains how an inebriated person impulsively responds to environmental cues without appreciation for possible negative consequences. Similarly, the neurological effects of stimulants

can activate aggressive tendencies in conflict situations. However, the intoxication item in this analysis did not specify the intoxicating substance, precluding a differential analysis of the relationships between crime and intoxication across different psychoactive substances.

Self: Drugs and Conviction for Violent Crimes

Participants' drug addiction qualified as a protective factor in the intermediate analyses, but the strength of the relationship was attenuated in the final concurrent and comprehensive predictor models. Thus, self reported drug addiction was more associated with the nonviolent crime group, probably reflecting a tendency for these individuals to be incarcerated for drug crimes. The instability in terms of qualifying as a protective factor across models may reflect conflicting sources of variance: (a) increased risk for violence associated with the activities of illegal drug markets; (b) increased risk for violence associated with intoxication and/or neurological irritability; (c) decreased probability for violent crime for drug addicted individuals incarcerated for nonviolent drug crimes; and (d) decreased probability of conviction for violent crime when charges have been reduced to obtain a guilty plea, i.e., plea bargaining (see below). The confluence of different sources of variance can cancel out important sources of influence related to drug addiction and crime when

analyzed within the same model. Moreover, each variable performs differently depending on the presence of co-variates, and their respective degrees of interaction in the model.

Accordingly, the negative association between self-reported drug addiction and conviction for violent crime does not necessarily mean that being addicted to drugs makes a female offender less likely to engage in criminally violent behavior. On the contrary, the present findings of a negative relationship between drug addiction and violent crime conviction could be an artifact of the criminal justice process. Both self-report and official records of violence are required to provide more specific information about the relationship between drugs and violent crime in female offenders.

Participant's Criminal History

The history of previous incarcerations was added to the analyses as a measure of one aspect of participants' criminal history, assuming that a criminal history would increase risk for violent behavior along the lines of criminal careers outlined by Blumstein and his colleagues (1988). The developmental pathway from conduct disorders through juvenile delinquency into adult violent offending has been well documented and multiple incarcerations have been associated with increased risk for incurring a conviction for a violent crime (Rivera & Widom, 1990). As a self-report instrument, it was assumed that the

respondent would include juvenile arrests which are generally not available in official records. Previous studies have found that most adult violent offenders have a history of juvenile delinquency. For these reasons it was expected that previous incarcerations would be positively associated with conviction for violent crime. It was not. Surprisingly, this variable demonstrated a strong negative association with conviction for violent crime. Several issues may have been operating here.

Two compatible explanations for this unexpected finding include potential gender differences and sample characteristics. The bulk of previous research, including juvenile studies, sampled male-only populations. The results of this study suggest that the relationship between criminal history and violent crime by females may be different than that for males. Women are more likely than men to hurt an intimate (child, lover, etc.). These types of crimes are often not associated with the same background patterns of risk that have been identified for male-perpetrated criminal violence (Browne, 1987). In addition, the criminal justice system may not incarcerate women as readily as men except for violent crimes (Simon & Baxter, 1989).

The negative relationship between a history of previous incarcerations and violent crime conviction may also reflect a preponderance of first time offenders

in the violent crime group. First time violent offenders receive more serious punishment than for lesser offenses, leading to incarceration in maximum security facilities like Mabel Bassett Corrections Center. As a maximum security facility, inmates are predominantly repeat offenders and violent offenders. Additional analyses would be required to determine how previous incarcerations qualified as a protective factor, decreasing risk of membership in the violent crime group.

Age

These findings identified youth as a risk factor for violent crime conviction. Specifically, women age 21 years and younger were more likely to have conviction for violent crimes. These results support the conclusions of other researchers indicating that adolescents and young adults are more likely than older adults to be involved in violent crime (Reiss & Roth, 1994).

Participants' History of Childhood Physical Abuse

Although nearly half (47.90%) of the participants met the definition for physical abuse, a history of physical abuse by parents did not act as a significant predictor of conviction for violent crime. This finding is further evidence that a history of physical abuse may be less important for women than men in predicting violent crime (Rivera & Widom, 1990). Rivera and Widom (1990) reported that race and sex moderated the effects of physical abuse on the development of

criminally violent behavior. They found that physical abuse increased risk for men, but not for women. Moreover, physical abuse did not predict violent crime in the white group, but it did in the black group (more in race section). Coupled with the finding that sexual abuse increased risk for conviction of violent crime (see below), these are provocative findings that suggest important implications for violence theory.

The lack of psychometric assessment of the current measure of physical abuse indicates that this result needs to be interpreted cautiously. This measure represents a liberal measure of physical abuse, i.e., it is more likely to produce false positives than false negatives. In other words, the constructed variable should capture all cases of actual physical abuse along with some number of cases where physical abuse did not occur. However, item #59, "It happened that my parents beat me often" strongly suggests physical abuse. Regardless, the presence of false positives could attenuate the effects of this variable by increasing measurement error. A more sensitive measure could have produced clearer results.

Participants' History of Childhood Sexual Abuse

A history of experiencing sexual abuse increased risk of violent crime conviction. The results of this study suggest that sexual abuse is a reliable predictor of violent crime in high risk populations. In this sample (N=167), 42.51% reported a history of sexual abuse. This is less than that found by Marcus-

Mendoza (1993) and her colleagues who reported that over 50% of their sample (N=551) of Oklahoma female inmates had a history of sexual abuse. The measure of sexual abuse in the present study may have been more conservative than that used by Marcus-Mendoza and her colleagues, requiring more severity to qualify as sexually abused. A score of 8 on the SAS was required to qualify for a positive history of sexual abuse in the present study. A review of the items suggests that any combination of responses leading to a score of 8 reveals serious distress related to early sexual experiences. In fact, Di Tomasso and Routh (1993) asserted that scores ≥ 1 are indicative of sexual abuse.

As reported above, these results need to be interpreted with caution because the use of this instrument in prison populations has not been evaluated. The reading level required for a valid administration has not been determined (DiTomasso & Routh, 1993). The mean level of education of these participants is lower than the undergraduate sampled by DiTomasso & Routh, therefore decreased reading comprehension may have introduced more measurement error in the present study. However, the small group interview administrations allowed the examiner to answer participants' questions and clarify the meaning of individual test items. In fact, there was considerable exchange between the examiner and the prisoners regarding the meaning of many items from a number of instruments including the SAS.

These results support earlier findings linking sexual abuse with female-

perpetrated violence in adulthood. The nature of the relationship has yet to be clarified. Childhood sexual abuse has been linked to a variety of adverse outcomes in adulthood including substance abuse and intense, unstable interpersonal relationships. It was previously thought to merely reflect other known correlates of childhood experience and violence rather than having its own etiological force. The effects of sexual abuse may be reflecting the additional influences of other variables not assessed, e.g., family-of-origin domestic violence. However, this analysis does not provide the data to make such a conclusion. Further study would be required to examine the positive and sturdy relationship between sexual abuse and violent crime conviction in women.

Several variables influence the impact of sexual abuse on future development, including the baseline propensity for violent behavior. These variables reflect the specific characteristics of the abuse event, the meaning of the abuse to the child, the child-perpetrator relationship, and the response of significant others to the disclosure of the sexual abuse (Beitchman et al., 1992, Briere & Elliott, 1994; Browne & Finklehor, 1986; Kendall-Tackett, Williams, Finklehor, 1993; Reiss & Roth, 1993). These in turn may be mediated by other personal and familial characteristics, e.g., age, developmental status, cognitive ability, gender, pre-existing psychopathology, parental supervision, marital conflict, and parental psychopathology. Further study could identify the variables associated with sexual abuse that increase or decrease the risk for developing a

high propensity for violent behavior.

Given that violence is a coercive interpersonal conflict resolution strategy, and given that sexual development is intimately linked to identity, forming a cornerstone of the foundation for interpersonal behavior, developmental theory might be informed by looking at the relationships between sexual experiences, identity, and the tendency to employ coercive versus cooperative interpersonal strategies in response to conflict.

Cognitive Ability

The estimated WAIS-R variable revealed a modest negative association with conviction for violent crimes in the intermediate model of developmental self variables. However, it lost significance in the final predictor models. This finding is significant because a small difference in the mean IQ's of the two groups actually made a distinction in the intermediate model of child/adolescent variables. However, the estimated WAIS-R lost significance in the broader models.

This finding is mostly consistent with previous research, though a stronger relationship was expected from the previous empirical evidence supporting the hypothesis that an inverse relationship exists between intelligence and violent crime. However, given the nearly equal distribution of scores for the two groups, it is significant that this modest relationship was detected.

The mean intelligence for the entire sample was 89.39 ($SD = 12.84$, range 55-

118) indicating that the distribution of IQ scores for these female criminal offenders differed from that of the general population. The means for the violent and nonviolent groups were, respectively, 88.42 ($SD = 13.34$, range 55-118) and 89.80 ($SD = 12.01$, range 67-117). The findings of this study are similar to those found by Cole, Fisher, and Cole (1968). They reported a mean of 88.9 (range 60 to 130) for 112 violent female offenders. The estimated WAIS-R scores for the current sample were lower than those of the general population and consistent with past research findings in offender populations (Gottfredson & Hirschi, 1990; Lynam et al., 1993; Wilson & Herrnstein, 1985).

Several characteristics of the present study may explain the lack of a significant relationship between cognitive ability and violent crime conviction: decreased variance in estimated IQ scores, sample characteristics of the present study, and use of the Shipley Institute of Living Scale.

The decreased variance in scores ($SD = 12.84$ versus norm $SD = 15.00$) found in this sample compared to the general population makes it more difficult to detect group differences. In addition, Hodgins (1992) warned that higher crime rates and a greater prevalence of substance abuse related crime in the United States could weaken the strong inverse relationship she found between cognitive ability and violent crime.

The study that produced the prison data base used in the present analysis was not designed to analyse the relationship between IQ and violent behavior.

The Shipley was included to provide a control measure for intelligence. It measures vocabulary and abstract reasoning, thus representing only two broad areas of intellectual functioning. Several context influences may have added error to this measurement (group setting, motivation). Moreover, additional measurement error was added by converting raw Shipley scores to estimated WAIS-R Full Scale IQ scores. Shipley correlations with the WAIS-R Full Scale IQ ranged from .68 to .90. Given the combined error associated with test administration and score conversion it is difficult to draw firm conclusions from this finding.

Detecting differences in cognitive abilities between incarcerated violent and nonviolent offenders would require more discriminating measures of cognitive abilities, i.e., intelligence scales, achievement scales, and neuropsychological measures. Risk factors for low intelligence overlap with those for substance abuse and both nonviolent and violent crime. A thorough cognitive evaluation could provide a rich picture of the relationships between a variety of cognitive abilities and violence.

Psychopathology

Conduct disorder, as expected, demonstrated a significant positive relationship with conviction for violent crimes in the limited analysis of only those variables derived from the Childhood Questionnaire. This is consistent with previous evidence that childhood behavior disorders increase risk for adult

violent crime (Laub & Lauritsen, 1993; Reiss & Roth, 1994; Yoshikawa, 1994). It is unfortunate that these measures were not available for the whole sample as childhood psychopathology is an important risk factor for a wide variety of adverse outcomes in adulthood.

With the available data, very little can be said about the significant findings for psychological symptoms detected at time of data collection, with depressive symptoms increasing the likelihood and anxiety symptoms decreasing the likelihood of membership in the conviction for violent crime group. Manifestations of anxiety and depression are discrete psychological symptoms, but not discrete diagnostic categories. Depressive disorders commonly include anxiety and vice versa.

The modest positive association between depressive symptoms and conviction for violent crimes may reflect a predisposition to mood disorders in women with an increased baseline for violent behavior. The increased affective symptoms may reflect a depressive response to incarceration. The prospect of longterm or lifelong imprisonment, common sentences for a violent crime, may induce depressive reactions. There may also be a link between mood disorder, alcoholism, and increased propensity for violent behavior. Similarly, the modest negative association for anxiety and violent crime conviction may be due to their substance abuse history such that women serving time for drug crimes experience

higher levels of anxiety. Beyond these conjectures, it is difficult to speculate what was the basis for these findings without information drawn from standardized assessment instruments like the Diagnostic Interview Schedule-IV.

Socioeconomic Variables

In general, socioeconomic variables were not predictive of group membership in this study. This is interesting as sociological explanations of violence dominated criminology until the 1980's, when more complex biopsychosocial models emerged to explain the development of violent behavior. These results indicated that higher socioeconomic status did not decrease risk of violent crime conviction.

Socioeconomic Status

These participants reported that at the time of their arrest, 56.97% were unemployed, 27.88% were on public assistance, 43.53% had not completed 12 years of education, and 8.38% had less than eight years of education. Although the sample as a whole were more disadvantaged than the general population, serious impoverishment displayed a significant positive association with conviction for violent crime in the intermediate model of self concurrent variables. However, it dropped out in the final predictor models. Accordingly, serious impoverishment appears to be less important than other factors for predicting violent crime by women.

Race

The racial categories were 41.32% white and 58.68% nonwhite. African-American represented 71.43% of the nonwhite participants. Interestingly, a modest negative relationship between race and conviction for violent crimes indicated a tendency, though not statistically significant, for whites to be more likely than nonwhites to have a record of a violent crime conviction.

This trend may reflect a racial bias in the criminal justice system. Previous studies indicate greater incarceration rates for nonwhite than white women. What is still unclear is whether or not nonwhite are more likely than white women to be arrested, incarcerated, convicted, and imprisoned for the same crimes. The trend for nonwhites to be less likely to be serving time for a violent crime may reflect a greater substance abuse problem and greater probability to be serving time for drug-related crimes.

An additional race issue was identified by Rivera & Widom (1990) that affects cumulative risk for violent behavior. They reported differential long-term effects by race (white and nonwhite) for childhood physical abuse on adult criminal behavior, indicating that childhood abuse was a risk factor for blacks but not whites. However, Rivera & Widom (1990) did not differentiate between physical and sexual abuse. Additional study is required to clarify these complex relationships.

Child/Adolescent Model

This predictor model identified two developmental predictors of conviction of violent crime: a childhood history of sexual abuse and having not been raised by both biological parents. Both of these predictors have already been discussed, but two issues need to be addressed here. First, this model of early predictors was less accurate than both the concurrent and comprehensive models. This is consistent with a developmental theory of violence, as it modeled predictors of violence that were more distant from the crime in terms of time, and therefore less powerful. Second, the history of sexual abuse dropped out as a significant predictor in the comprehensive model, whereas having not been raised by both biological parents was retained. This supports previous findings that parenting factors are more important than any specific history of abuse because parenting factors play a major role in determining the long-term effects of abuse (Beitchman et al., 1992; Briere & Elliott, 1994; Browne & Finkelhor, 1986; Kendall-Tackett et al., 1993).

Concurrent Model

As noted, the concurrent model was significantly more accurate (76.62% versus 59.17%) than the child/adolescent model, affirming that contemporaneous correlates are more powerful than early predictors of violent crime. In fact, the accuracy of the concurrent model nearly equalled that of the comprehensive model (76.62% versus 77.81%), suggesting that the childhood/adolescent

correlates neither added nor took away from the comprehensive model in terms of accurately predicting convictions for violent crime. Each significant predictor that emerged from this model was also significant in the comprehensive model.

Comprehensive Model

Although the available data did not include some risk factors for violence, e.g., psychopathology, the comprehensive predictor model projects a reasonably accurate profile of risk for convictions of violent crimes by women. The profile depicts an intoxicated young adult female, who is not a drug addict, with no previous incarcerations, who was raised by both biological parents, whose mother did not have a substance abuse problem, and who tends to manifest develop depressive rather than anxiety symptoms while incarcerated. The greater predictive accuracy of the comprehensive model (see Table 16) over the developmental model is consistent with the biopsychosocial theory of violent behavior that guided this study. The profile highlights the multidimensional nature of criminal violence supporting the need for policy planners to address female-perpetrated violence with multiple strategies, carried out simultaneously, and aimed at children, adolescents, adults, and communities.

The variables that qualified as risk factors included intoxication and youth. Intoxication at time of crime displayed a sixfold increase and being 21 years old or younger displayed a fivefold increase in risk for conviction of violent crime. These results emphasize the importance of intoxication and youth as predictors of

female-perpetrated violent crime, risk factors that women share with men. These findings are consistent with the vast majority of the empirical literature (Hawkins, 1995; Reiss & Roth, 1994).

The protective factors included having not been raised by both biological parents and previous incarcerations. As previously discussed, how circumstances other than living with both natural parents reduces risk for violent crime is not understood. However, the results may reflect situations in which an especially dysfunctional parent was somehow removed from the family-of-origin, thereby enhancing overall family functioning. The history of previous incarcerations is less a protective influence in the classic sense, but probably reflects the effects of sentencing practices. A first time offender is more likely to be incarcerated for a violent crime than a nonviolent crime. At the same time, repeat nonviolent offenders are more likely to be sentenced to prison because of their tendency to continue criminal activity. These two combined forces would make it more likely for previous incarcerations to decrease the probability of membership in the violent crime group.

It was interesting that the significant positive association with paternal substance abuse dropped out of this last analysis, but the negative association between maternal substance abuse and conviction of violent crime achieved statistical significance. This results suggests that the negative effects of maternal substance abuse are a more powerful predictor than the positive effects, i.e.,

increasing risk, of fathers' substance abuse or violent crime conviction. Moreover, because the direction of relationship is different, there appears to be differential effects of parental substance abuse, depending on whether it is the mother or father. Again, it is interesting that the variables reflecting cases in which participants reported that both parents were alcoholics and/or drug addicts did not display significant effects.

One goal of the present study was to look at possible developmental correlates of violent crime. However, the final comprehensive model produced only one significant developmental variable, having not been raised by both biological parents. This probably reflects the greater predictive power of concurrent over early correlates.

The relatively greater strength of proximate over distal correlates found in this study is consistent with developmental theories of criminality and violence (Gottfredson & Hirschi, 1990; Loeber & Stouthamer-Loeber, 1986; Sameroff et al., 1993). Longitudinal analysis would be required to track developmental correlates of violent behavior over time. If reliable markers for the same basic processes are identified as they appear at progressive developmental stages, e.g., oppositional defiant disorder → conduct disorder → antisocial personality disorder, then cross-sectional analyses of matched samples could achieve the same results. A promising approach to the study of developmental processes associated with offending was described by LeBlanc (1990). It looks at the conditions that

activate delinquent behavior apart from the conditions that are associated with escalating delinquent behavior (LeBlanc, 1990).

Limitations of the Study

Several limitations of this study qualify the interpretation of the findings. One of the primary weaknesses of the study is that it is a post hoc analysis of archival data, so measures were not chosen to specifically address the questions of this study, i.e., differences between violent and nonviolent offenders. A prospective design could include instruments that more accurately target the correlates of violence identified in the empirical literature.

Furthermore, the measurement of violence is notoriously difficult. Like most studies of violence, this one relied on official records as the measurement of violence. There are two primary problems with using official records to assess violence. First, official records do not reflect violent crimes that were either undetected or unprosecuted for a variety of reasons. Also, official records can fail to detect significant criminal violence when violent elements of a crime are lost during plea bargaining, i.e. when prosecutors obtain a guilty plea in exchange for reduced charges that carry lighter sentences. Therefore, the use of official records fails to capture the full range of criminally violent behavior in the sample.

It is very likely that there were criminally violent individuals in the group without violent crime conviction. However, these results can be used to provide information about the most seriously violent female offenders, because the same

adjudication processes that may have diverted some violent offenders into the group without violent convictions also channel the most violent individuals into the violent crime group. Murders are not reduced to a nonviolent crime. Serious aggravated assaults are unlikely to be reduced to a nonviolent crime.

Nevertheless, the measure of violence would have been improved with additional self-report measures of violence, enhancing the generalizability of the results.

However, self-report measures possess their own potential problems.

The reliability of self-report measures in criminal populations is naturally suspect. However, self-report data is a necessary and viable method of collecting information that might otherwise be unavailable (Harrell, 1985). The reliability and validity of self-report methods in criminal and substance abuse populations have been extensively explored and debated for over six decades (Lab and Allen, 1984; Nurco, 1985). Most authors have concluded that reliable self-report data by criminals can be obtained when appropriate data collection instruments and techniques are employed (Amsel, Mandell, Matthias, Mason, and Hocherman, 1976; Feldman, 1993; Gandossy, Williams, Cohen, and Harwood, 1980; Hagan, 1994; Harrell, 1985; Lab and Allen, 1984; Maddux and Desmond, 1975; Nurco, 1985; Stephens, 1972).

A central concern is whether or not participants respond honestly.

Sometimes research participants reply honestly, sometimes not. Collins et al.

(1982) maintained that it is not possible to summarize the nature of the systematic bias that exists in individual reporting patterns in any simple way. Incarcerated individuals may not be motivated to provide an accurate picture of themselves. In fact, they may amuse themselves by purposefully distorting the truth in an attempt to dupe the researchers. Still, there is consensus that self-report can be cautiously used with confidence.

Therefore, the central concern is how to collect useful data. Obtaining worthwhile results is achieved by using self-report instruments with demonstrated reliability and validity for the population in question; plus using research strategies that are designed to create conditions that are conducive to complete and truthful responding. Ensuring confidentiality, clarifying the purpose of the study, and correcting illusions that their responses could be used for or against them in the future, to help or hurt the parole process for example. The focus should be on constantly monitoring data collection activities and being prepared to examine the results with a critical eye.

An additional major weakness of the present study was the relatively small sample size. Logistic regression requires large samples in order to study the large number of violence correlates. A larger sample would have allowed a cross-validation analysis by randomly splitting the sample in half and running the same analyses on both groups. Comparing the results of those two separate studies

would validate or invalidate the findings.

Another deficiency was the additional measurement error introduced by missing data. Because SAS throws out cases with missing data there were varying sample sizes across models according to the amount of missing data associated with each variable. This introduces an additional source of measurement error.

The study of this high risk, highly specialized population introduces the issue of restricted statistical variance with the subsequent reduced ability of the statistics to produce significant effects. However, this makes the findings of differences between the two groups more remarkable.

The study of the development of violence could also be strengthened by focusing on specific crimes of violence, e.g., intimate violence, using the victim-offender relationship to classify the violence. Women who kill their children may be different in important ways than women who assault a stranger in a bar. Studying specific kinds of violence could decrease the error variance that stems from the effects of variables that have not been included in the analysis.

Furthermore, the results of this study would be more useful with a standardized measure of psychopathology, assessing both lifetime and current prevalence rates for the group. The limited number of Childhood Questionnaires also prevented including the important risk associated with childhood psychopathology.

Conclusions

Experts in violence have promoted a multivariate approach to the study of violence (Reiss & Roth, 1994; Tedeschi & Felson, 1994). The primary strength of this study was the simultaneous examination of a variety of correlates of violence as risk/protective factors. The notion of cumulative risk outlined by Rutter (1987) and others was supported by these results.

The findings from this study were both consistent and inconsistent with previous research. The differences from previous studies probably reflect two general issues: dissimilar measurement methods and gender differences. Several of the present results supported conclusions reported in earlier work about the association between various risk/protective factors and violent crime. These included intoxication, history of sexual abuse, age at time of crime, previous incarcerations, drug addiction, and parental rejection. However, the relationships were not always in the direction that had been initially predicted. In addition, several variables were expected to increase risk for violent crime but failed to consistently predict conviction for violent crimes. These included parental criminality and parental substance abuse.

The strong relationship between violent crime convictions and both youth and intoxication emphasizes the role that impulsivity plays in violent behavior. An individual that enters adolescence with low levels of self-control, or a relatively high propensity for violent behavior, is likely to engage in impulsive behaviors,

including violence towards others and/or towards themselves. Interventions that enhance the development of self-control can be used with individuals with impulsive behavior problems.

This study could serve as a pilot study for a project focusing on the development of criminally violent behavior in women, including self-report measures to complement official criminal records and allow for the analysis of the victim-offender relationship (Weisheit, 1993). The results of the present study support the assertion that there are important gender differences in the developmental pathways to criminal violence (Widom & Ames, 1994), especially for the roles of physical abuse, sexual abuse, and alcohol abuse. The results also indicate that the effects alcohol and/or drug abuse by parents within the family or originating and by the individual are complicated, with potential differential effects on predicting criminal violence. The gender differences apparent in the development of violent behavior emphasize the need for understanding female offenders so that prevention and rehabilitation programs can accurately target the needs of high risk women. The findings of this study underscore the need to improve drug and alcohol treatment for high risk women as well as prevent and effectively treat victims of sexual abuse.

References

Achenbach, T.M., Howell, C.T., McConaughy, S.H., & Stanger, C. (1995a). Six-year predictors of problems in a national sample of children and youth: II. Signs of disturbance. Journal of the American Academy of Child and Adolescent Psychiatry, 34(4), 488-498.

Achenbach, T.M., Howell, C.T., McConaughy, S.H., & Stanger, C. (1995b). Six-year predictors of problems in a national sample of children and youth: III. Transitions to young adult syndromes. Journal of the American Academy of Child and Adolescent Psychiatry, 34(5), 658-669.

Argyle, M. (1991). Cooperation: The basis of sociability. New York: Rutledge.

Arneklev, B.J., Grasmick, H.G., Tittle, C.R., & Bursik, R.J. (1993). Low self-control and imprudent behavior. Journal of Quantitative Criminology, 9(3), 225-247.

Arrindell, W.A., Emmelkamp, E.B., & Monsma, A. (1983). Psychometric evaluation of an inventory for assessment of parental rearing practices. Acta Psychiatrica Scandinavica, 67, 163-177.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of general Psychiatry, 4, 561-571.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties

of the Beck Depression Inventory: Twenty years of evaluation. Clinical Psychology Review, 8, 77-100.

Beitchman, J.H., Zucker, K.J., Hood, J.E., DaCosta, G.A., Akman, D., & Cassavia, E. (1992). A review of the long-term effects of child sexual abuse. Child Abuse & Neglect, 16, 101-118.

Blankfield, A. (1991). Women, alcohol dependence, and crime. Drug and Alcohol Dependence, 27, 185-190.

Blumstein, A., Cohen, J., & Farrington, D. P. (1988). Criminal career research: Its value for criminology. Criminology, 26, 621-624.

Briere, J.N., & Elliot, D. M. (1994). Immediate and long-term impacts of child sexual abuse. The Future of Children, 4(2), 54-69.

Browne, A. (1987). When Battered Women Kill. New York: The Free Press.

Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. Psychological Bulletin, 99, 66-77.

Campbell, A. (1995). Representations, repertoires, and power: Mother-child conflict. Journal for the Theory of Social Behaviour, 25(1), 35-37.

Campbell, J. C. (1995). Prediction of homicide of and by battered women. In J. C. Campbell (Ed.) Assessing dangerousness: Violence by sexual offenders, batterers, and child abusers. Thousand Oaks, CA: Sage Publications.

Capaldi, D.M., & Patterson, G.R. (1996). Can violent offenders be

Dissertation: Female Criminal Violence distinguished from frequent offenders: Prediction from childhood to adolescence. Journal of Research in Crime and Delinquency, 33(2), 206-231.

Cohen, L.E., & Machalek, R. (1988). A general theory of expropriative crime: An evolutionary ecological approach. American Journal of Sociology, 94(3), 465-501.

Collins, J.J., Schlenger, W.E., & Jordan, B.K. (1988). Antisocial personality and substance abuse disorders. Bulletin of the American Academy of Psychiatry Law, 16, 187-198.

Convit, A., Jaeger, J., Lin, S., Meisner, M., & Volavka, J. (1988). Predicting assaultiveness in psychiatric inpatients: A pilot study. Hospital and Community Psychiatry, 39, 429-434.

Coons, P.M. (1994). [Letter to the editor]. Child Abuse and Neglect, 18(10), 885.

DiTomasso, M.J., & Routh, D.K. (1993). Recall of abuse in childhood and three measures of dissociation. Child Abuse and Neglect, 17, 477-485.

DiTomasso, M.J., & Routh, D.K. (1994). [Letter to the editor]. Child Abuse and Neglect, 18 (10), 886-887.

Dobash, R. E., & Dobash, R. P. (1984). The nature and antecedents of violent events. British Journal of Criminology, 24(3), 269-288.

Eagly, A.H. & Steffen, V.J. (1986). Gender and aggressive behavior: A meta-analytic review of the social psychological literature. Psychological Bulletin,

100(3), 309-330.

Egeland, B. (1993). A history of abuse is a major risk factor for abusing the next generation. In R.J. Gelles and D.R. Loseke (Eds.), Current controversies on family violence. Newbury Park, CA: Sage Publications.

Eronen, M. (1995). Mental disorders and homicidal behavior in female subjects. American Journal of Psychiatry, 152(8), 1216-1218.

Fagan, J., & Browne, A. (1993). Violence between spouses and intimates: Physical aggression between women and men in intimate relationships. In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Fagan, J., & Wexler, S. (1987). Crime at home and in the streets: The relationship between family and stranger violence. Violence and Victims, 2(1), 5-21.

Farrington, D.P., Loeber, R., & Van Kammen, W.B. (1990). Long-term criminal outcomes of hyperactivity-impulsivity-attention deficit and conduct problems in childhood. In L. Robins and M. Rutter (Eds.) Straight and devious pathways from childhood to adulthood. New York: Cambridge University Press.

Farrington, D.P. (1991). Childhood aggression and adult violence: Early precursors and later-life outcomes. In D.J. Pepler and K.H. Rubin (Eds.), The development and treatment of childhood aggression, pp. 5-29. Hillsdale, N.J.: Erlbaum.

Feehan, M., McGee, R., Williams, S.M., & Nada-Raja, S. (1995). Models of adolescent psychopathology: Childhood risk and the transition to adulthood. Journal of the American Academy of Child and Adolescent Psychiatry, 34(5), 670-679.

Frick, P.J., Kuper, K., Silverthorn, P., & Cotter, M. (1995). Antisocial behavior, somatization, and sensation-seeking behavior in mothers of clinic-referred children. Journal of the American Academy of Child and Adolescent Psychiatry, 34(6), 805-812.

Gerlsma, C., Emmelkamp, P.M.G., Arrindell, W.A. (1990). Anxiety, depression, and perception of early parenting: A meta-analysis. Clinical Psychology Review, 10, 251-277.

Goetting, A. (1987). Homicidal wives. Journal of Family Issues, 8(3), 332-341.

Goetting, A. (1988). Patterns of homicide among women. Journal of Interpersonal Violence, 3(1), 3-20.

Goldstein, P. J. (1992). Drugs and violence. Questions and answers in lethal and non-lethal violence. Proceedings of the First Annual Workshop of the Homicide Research Working Group, National Institute of Justice (pp. 11-26). Ann Arbor MI, June 14-16, 1992. Washington, D.C.: National Institute of Justice.

Gottfredson, M., & Hirschi, T. (1990). A general theory of crime.

Stanford, CA: Stanford University Press.

Grasmick, H.G., Tittle, C.R., Bursik, R.J., & Arneklev, B.J. (1993).

Testing the core empirical implications of Gottfredson and Hirschi's general theory of crime. Journal of Research in Crime and Delinquency, 30(1), 5-29.

Hawkins, J. D. (1995). Controlling crime before it happens: Risk-focused prevention. National Institute of Justice Journal, August, No. 229, 10-18.

Herrenkohl, E.C., Herrenkohl, R.C., & Toedter, L.J. (1983). Perspectives on the intergenerational transmission of abuse. In D. Finkelhor, R.J. Gelles, GT. Hotaling, & M.A. Straus (Eds.), The dark side of families: Current family violence research (pp. 305-316). Beverly Hills, CA: Sage Publications.

Herrnstein, R.J., & Murray, C. (1994). The Bell Curve. New York: Free Press.

Hirschi, T., & Hindelang, M.J. (1977). Intelligence and delinquency: A revisionist review. American Sociological Review, 42, 571-587.

Hodgins, S. (1992). Mental disorder, intellectual deficiency, and crime: Evidence from a birth cohort. Archives of General Psychiatry, 49, 476-483.

Hollingshead, A.B. (1975). Four factor index of social status. Unpublished working paper.

Hosmer, D., & Lemeshow, S. (1989). Applied logistic regression. New York: John Wiley & Sons.

Hyde, J. S. (1984). How large are gender differences in aggression? A

developmental meta-analysis. Developmental Psychology, 20, 51-66.

Hyde, J. S. (1986). Gender differences in aggression. In J. S. Hyde and M. C. Linn (Eds.), The psychology of gender differences (pp. 61-56). Baltimore: Johns Hopkins University Press.

Kandel, E., Mednick, S.A., Kirkegaard-Sorenson, L., Hutchings, B., Knop, J., Rosenberg, R., & Schulsinger, F. (1988). IQ as a protective factor for subjects at high risk for antisocial behavior. Journal of Consulting and Clinical Psychology, 56, 224-226.

Kellam, S.G., Rebok, G.W., Ialongo, N., & Mayer, L.S. (1994). The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiologically-based preventive trial. Journal of Child Psychology and Psychiatry, 35(2), 259-281.

Kendall-Tackett, K.A., Williams, L.M., & Finklehor, D. (1993). Impact of sexual abuse on children: A review and synthesis of recent empirical studies. Psychological Bulletin, 113(1), 164-180.

Kruttschnitt, C. (1993). Violence by and against women: A comparative and cross-national analysis. Violence and Victims, 8(3), 253-270.

Kruttschnitt, C. (1994). Gender and interpersonal violence. In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Lake, E.S. (1993). Exploration of the violent victim experiences of female

offenders. Violence and Victims, 8(1), 41-52.

Laub, J., & Sampson, R. (1988). Unraveling families and delinquency: A reanalysis of the Glueck's data. Criminology, 26, 355-380.

Laub, J.H., & Lauritsen, J.L. (1993). Violent criminal behavior over the life course: A review of the longitudinal and comparative research. Violence and Victims, 8(3), 235-252.

Le Blanc, M. (1990). Two processes of the development of persistent offending: Activation and escalation. In L. Robins and M. Rutter (Eds.) Straight and devious pathways from childhood to adulthood. New York: Cambridge University Press.

Lewis, D. O., Yeager, C. A., Cobham-Portorreal, C. S., Klein, N., Showalter, C., & Anthony, A. (1991). A follow-up of female delinquents: Maternal contributions to the perpetuation of deviance. Journal of the American Academy of Child and Adolescent Psychiatry, 30(2), 197-201.

Lewis, D., Shanok, S., Pincus, J. H., Grant, M., & Ritvo, E. (1979). Violent juvenile delinquents: Psychiatric, neurological, psychological and abuse factors. Journal of the American Academy of Child Psychiatry, 18, 307-319.

Lilly, J. R., Cullen, F.T., & Ball, R.A. (1995). Criminological theory: Context and consequences, 2nd edition. Thousand Oaks, CA: Sage Publications.

Loeber, R., & Dishion, T. (1983). Early predictors of male delinquency: A review. Psychological Bulletin, 94(1), 68-99.

Loeber, R., & Stouthamer-Loeber, M. (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. Pp. 219-339 in M. Tonry and N. Morris, (Eds.), Crime and Justice, Volume 7. Chicago: University of Chicago Press.

Loeber, R., Green, S.M., Keenan, K., & Lahey, B.B. (1995). Which boys will fare worse? Early predictors of the onset of Conduct Disorder in a six-year longitudinal study. Journal of the American Academy of Child and Adolescent Psychiatry, 34(4), 499-509.

Lynam, D., Moffitt, T., & Stouthamer-Loeber, M. (1993). Explaining the relation between IQ and delinquency: Class, race, test motivation, school failure, or self-control? Journal of Abnormal Psychology, 102(2), 187-196.

Malinosky-Rummell, R., & Hansen, D.J. (1993). Long-term consequences of childhood physical abuse. Psychological Bulletin, 114(1), 68-79.

Mann, R.E., Sobell, L.C., Sobell, M.B. & Pavan, D. (1985). Family Tree Questionnaire for Assessing Family History of Drinking Problems. In D.J. Lettieri, M.A. Sayers, and J.E. Nelson (Eds.) NIAAA Treatment Handbook Series, Vol.2. Alcoholism treatment assessment research instruments. National Institute of Alcohol Abuse and Alcoholism. Washington, DC. DHHS Pub. No. 85-1380, pp. 162-166.

Marcus-Mendoza, S., Sargent, E., & Ho, Y.C. (1993). Profile of abused women offenders. A grant report submitted to the State of Oklahoma,

Department of Corrections.

McCord, J. (1979). Some child rearing antecedents of criminal behaviour in adult men. Journal of Personality and Social Psychology, 37, 1477-1486.

McCord, J. (1981). Alcoholism and criminality. Journal of Studies on Alcohol, 42(9), 739-748.

McCord, J. (1988). Parental aggressiveness and physical punishment in a long-term perspective. In G.T. Hotaling, D. Finklehor, J.T. Kirkpatrick, and M.A. Straus (Eds.), Family Abuse and its Consequences, 91-98. Newbury Park: Sage Publications.

Miczek, K. A., DeBold, J. F., Haney, M., Tidey, J., Vivian, J., & Weerts, E. M. (1994). In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Monahan, J. (1992). Mental disorder and violent behavior. American Psychologist, 47, 511-521.

Monahan, J., & Steadman, H.J. (1994). Toward a rejuvenation of risk assessment research. In Monahan, J. and Steadman, H.J. (Eds.) Violence and mental disorder: Developments in risk assessment. Chicago: The University of Chicago Press.

Murray, C.J.L., & Lopez, A.D. (1996). Evidence-based health policy---Lessons from the Global Burden of Disease Study. Science, 274(5288), 740-743.

Patterson, G.R., & Capaldi, D.M. (1991). Antisocial parents: Unskilled

and vulnerable. In P.A. Cowan and M. Hetherington (Eds.) Family Transitions, Chapter 7, 195-218. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Patterson, G.R., DeBaryshe, B.D., & Ramsey, E. (1989). A developmental perspective on antisocial behavior. American Psychologist, 44, 329-335.

Perris, C., Jacobsson, L., Lindstrom, H., von Knorring, L., & Perris, H. (1980). Development of a new inventory for assessing memories of parental rearing behavior. Acta psychiatrica scandinavica, 61, 265-274.

Regier, D., Farmer, M., Rae, D., Locke, B., Keith, S., Judd, L., & Goodwin, F. (1990). Comorbidity of mental disorders with alcohol and other drug abuse: Results from the Epidemiologic Catchment Area (ECA) Study. Journal of the American Medical Association, 264(19), 2511-2518.

Reiss, A. J., Jr., & Roth, A. J. (1993). Understanding and preventing violence. Washington, D. C.: National Academy Press.

Reiss, A. J., Jr., & Roth, A. J. (1994). Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Rivera, B., & Widom, C.S. (1990). Childhood victimization and violent offending. Violence and Victims, 5(1), 19-34.

Robertson, G. (1990). Correlates of crime among women offenders. Medicine, Science, and the Law, 30(2), 165-174.

Robertson, R. G., Bankier, R. G., & Schwartz, L. (1987). The female offender: A Canadian study. Canadian Journal of Psychiatry, 32, 749-755.

Robins, L.N. (1978). Sturdy childhood predictors of adult antisocial behaviour: replications from longitudinal studies. Psychological Medicine, 8, 611-622.

Robins, L. N., Helzer, J. E., Croughan, J., & Ratcliff, K. (1981). National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity. Archives of General Psychiatry, 38, 381-389.

Robins, R.W., John, O.P., Caspi, A., Moffitt, T.E., Stouthamer-Loeber, M. (1996). Resilient, overcontrolled, and undercontrolled boys: Three replicable personality types. Journal of Personality and Social Psychology, 70(1), 157-171.

Rodgers, W. (1995). Analysis of cross-validated data. In L.G. Grimm and P.R. Yarnold (Eds.), Reading and understanding multivariate statistics. Washington, D.C.: American Psychological Association.

Rosenbaum, A., & O'Leary, R.D. (1981). Marital violence: Characteristics of abusive couples. Journal of Consulting and Clinical Psychology, 49(1), 63-76.

Rosenberg, M.L., & Mercy, J.A. (1991). Introduction. In M.L. Rosenberg and M.A. Fenley (Eds.) Violence in America: A Public Health Approach. New York: Oxford University Press.

Rosenberg, M.L., & Mercy, J.A. (1991b). Assaultive violence. In M.L. Rosenberg and M.A. Fenley (Eds.) Violence in America: A Public Health Approach (pp. 14-50). New York: Oxford University Press.

Roth, J.A. (1994). Psychoactive substances and violence. Research in Brief.

February, 1994. Washington, D.C.: Department of Justice.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms.

American Journal of Orthopsychiatry, 57, 316-331.

Sameroff, A.J., Seifer, R., Baldwin, A., & Baldwin, C. (1993). Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. Child Development, 64, 80-97.

Sampson, R. J., & Lauritsen, (1994). Violent victimization and offending: Individual-, situational-, and community-level risk factors. In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Shipley, W.C. (1940). A self-administering scale for measuring intellectual impairment and deterioration. Journal of Psychology, 9, 371-377.

Simon, R. J., & Baxter, S. (1989). Gender and violent crime. In N. A. Weiner and M. E. Wolfgang (Eds.), Violent crime, violent criminals, Newbury, CA: Sage Publications.

Simon, R.J., & Landis, J. (1991). The crimes women commit, the punishment they receive. Lexington, MA: Lexington Books.

Sommers, I., & Baskin, D. R. (1993). The situational context of violent female offending. Journal of Research in Crime and Delinquency, 30(2), 136-162.

Sommers, I., & Baskin, D. R. (1994). Factors related to female adolescent initiation into violent street crime. Youth & Society, 25(4), 468-489.

Spaccarelli, S., Coatsworth, J.D., & Bowden, B.S. (1995). Exposure to serious family violence among incarcerated boys: Its association with violent offending and potential mediating variables. Violence and Victims, 10(3), 163-182.

Speckart, G., & Anglin, M. D. (1986). Narcotics and crime: A causal modeling approach. Journal of Quantitative Criminology, 2(1), pp. 3-28.

Spielberger, C., Gorsuch, R., Lushene, R. Vagg, P., & Jacobs, G. (1983). Manual for the State-Trait Anxiety Inventory: STAI Form Y. Palo Alto, CA: Consulting Psychologists Press.

Stelle, C. M., & Josephs, R. A. (1990). Alcohol myopia: Its prized and dangerous effects. American Psychologists, 45(8), 921-933.

Straus, M.A. (1980). Victims and aggressors in marital violence. American Behavioral Scientist, 23, 681-704.

Straus, M.A. (1991). Discipline and deviance: Physical punishment of children and violence and other crime in adulthood. Social Problems, 38(2), 133-154.

Sullivan-Cosetti, M. (1988). An exploratory study of the common and recurring factors present in juvenile female violent offenders referred to juvenile courts nationwide for the crimes of robbery and aggravated assault. Unpublished doctoral dissertation, University of Pittsburgh, Pittsburgh, PA.

Swanson, J.W., Holzer, C.E., Ganju, V.K., & Jono, R.T. (1990). Violence and psychiatric disorder in the community: Evidence from the Epidemiologic

Catchment Area Surveys. Hospital and Community Psychiatry, 41(7), 761-770.

Swanson, J.W., & Holzer, C.E. (1991). Violence and ECA data. A letter. Hospital and Community Psychiatry, 42(9), 954-955.

Tartar, R. E. (1979). Minimal brain dysfunction as an etiological predisposition to alcoholism. Paper presented at the Conference "Evaluation of the Alcoholics: Implication for research , theory and treatment." University of Connecticut, Center for Drug and Alcohol Studies, Farmington.

Tedeschi, J.T. & Felson, R.B. (1994). Violence, aggression, and coercive actions. Washington, D.C.: American Psychological Association.

Toothaker, L. (1998). Personal communication about logistic regression analysis. University of Oklahoma, Department of Psychology, Norman, OK.

Weisheit, R. (1993). Structural correlates of female homicide patterns. In A.V. Wilson (Ed.) Homicide: The victim-offender connection. Cincinnati, OH: Anderson Publishing Company.

Wellisch, J., Prendergast, M. L., & Anglin, M. D. (1994). Drug-abusing women offenders: Results of a national survey. National Institute of Justice: Research in Brief, October, 1994. Washington, D. C.: U. S. Department of Justice.

Werner, E.E. (1987). Vulnerability and resiliency in children at risk for delinquency: A longitudinal study from birth to adulthood. In J.D. Burchard & S.N. Burchard (Eds.), Primary prevention of psychopathology: Vol. 10.

Prevention of delinquent behavior (pp. 16-43). Newbury Park, CA: Sage.

White, H. R., & Hansell, S. (1996). The moderating effects of gender and hostility on the alcohol-aggression relationship. Journal of Research in Crime and Delinquency, 33(4), 450-470.

White, J.L., Moffitt, T.E., Caspi, A., Bartusch, D.J., Needles, D.J., & Stouthamer-Loeber, M. (1994). Measuring impulsivity and examining its relationship to delinquency. Journal of Abnormal Psychology, 103(2), 192-205.

Widiger, T.A., & Trull, T.J. (1994). Personality disorders and violence. In J. Monahan and H.J. Steadman (Eds.) Violence and mental disorder: Developments in risk assessment. Chicago: University of Chicago Press.

Widom, C.S. (1989). Child abuse, neglect, and adult behavior: Research design and findings on criminality, violence, and child abuse. American Journal of Orthopsychiatry, 59(3), 355-367.

Widom, C.S. (1991). Avoidance of criminality in abused and neglected children. Psychiatry, 54, 162-174.

Widom, C.S., & Ames, M.A. (1994). Criminal consequences of childhood sexual victimization. Child Abuse and Neglect, 18(4), 303-318.

Wilson, J. Q., & Herrnstein, R. J. (1985). Crime and human nature. New York: Simon and Schuster.

Wolfgang, M. E. (1958). Patterns in Criminal Homicide. University of Pennsylvania Press.

Dissertation: Female Criminal Violence

Wright, R.E. (1995). Logistic regression. In L.G. Grimm and P.R. Yarnold (Eds.), Reading and understanding multivariate statistics. Washington, D.C.: American Psychological Association.

Yoshikawa, H. (1994). Prevention as cumulative protection: Effects of early family support and education on chronic delinquency and its risks. Psychological Bulletin, 115(1), 28-54.

Zachary, R.A. (1986). Shipley Institute of Living Scale, Revised Manual. Los Angeles: Western Psychological Services.

Appendix A
Tables of Results

Table 1

Demographic Characteristics of the Sample

Variable	Mean	Range	<u>S.D.</u>
Age	31.01	19 to 58	7.21
Age at time of incarceration	27.07	15 to 48	7.10
Education	11.84	0 to 16	2.10
Socioeconomic status	28.08	5 to 48	9.70

Table 2

Demographic Variables and Between Group Differences

	<u>N/Percent of Group</u>		χ^2	df	p
	Violent crime*	No violent crime*			
All participants	83/49.70%	84/50.30			
Employed					
Yes	34/20.61%	37/22.42	.163	1	.686
No	48/29.09	46/27.88			
Ethnicity:					
White	39/23.35	30/17.96	3.511	1	.476
Black	29/17.37	41/24.55			
Hispanic	2/1.20	2/1.20			
Native American	6/3.59	8/4.79			
Other	5/2.99	5/2.99			
Variable	Means		t-test	df	p
Education	11.90	11.77	.566	162	.674
Age	30.61	31.40	-1.902	165	.100
Age when incarcerated	26.36	29.02	-6.506	165	.0005

* Refers to official record of criminal convictions.

Table 3

Results of Univariate Chi Square Analyses: Significant Dichotomous Parent Variables

		<u>N/Percent of Group</u>		χ^2	df	p
		Conviction of Violent Crime	No Conviction of Violent Crime			
Paternal alcoholism	yes	50/29.94%	40/23.95	2.677	1	0.102
	no	33/19.76	44/26.35			
Paternal substance abuser	yes	52/31.14	42/25.15	2.715	1	0.099
	no	31/18.56	42/25.15			
Not raised by both biological parents	yes	5/2.99	15/8.98	5.545	1	0.019
	no	78/46.71	69/41.32			
Father not known	yes	7/4.19	16/9.58	3.960	1	0.047
	no	76/45.51	68/40.72			

p < .20

Table 4

Results of Univariate Chi Square Analyses: Significant Dichotomous Self Substance Abuse Variables

		<u>N/Percent of Group</u>		<u>X²</u>	<u>df</u>	<u>p</u>
		Conviction+	Conviction--			
Alcoholism ¹	yes	8/4.79%	2/1.20	3.91	1	0.048
	no	75/44.91	82/49.10			
Alcoholism ¹	yes	45/26.95	37/22.16	1.73	1	0.189
	no	38/22.75	47/28.14			
Problem drinker ²	yes	32/19.88	23/14.29	2.41	1	0.121
	no	48/29.81	58/36.02			
Intoxication at time of crime	yes	30/18.52	15/9.26%	7.99	1	0.005
	no	49/30.25	68/41.98			
Drug addiction ⁴	yes	13/7.78	30/17.96	8.78	1	0.003
	no	70/41.92	54/32.34			
Drug abuse ³	yes	58/35.80	67/41.36	2.84	1	0.092
	no	23/14.20	14/ 8.64			

p < .20

1. Derived from Substance Abuse Family Tree (identified self as alcoholic without drug addiction).
2. Derived from Alcohol and Drug Use Questionnaire.
3. Definition of alcoholism using Quantity/Frequency Index from the Alcohol and Drug Use Questionnaire.
4. Derived from Substance Abuse Family Tree (identified self as drug addict without alcoholism).

Table 5

Results of Univariate Chi Square Analyses: Significant Dichotomous Self and Socioeconomic Variables

		<u>N/Percent of Group</u>		χ^2	df	p
		Conviction+	Conviction-			
Sexually Abused	yes	44/26.35%	27/16.17	7.44	1	0.006
	no	39/23.35	57/34.13			
Previously incarcerated	yes	19/11.38	49/29.34	21.73	1	0.001
	no	64/38.32	35/20.96			
Has/had children	yes	63/39.38	76/47.50	4.98	1	0.026
	no	15/9.38	6/ 3.75			
Younger than 21 years	yes	21/12.57	6/ 3.59	10.16	1	0.001
	no	62/37.13	78/46.71			
Nonwhite	yes	44/26.35	54/32.34	2.19	1	0.139
	no	39/23.35	30/17.96			
Seriously impoverished	yes	24/14.37	17/10.18	1.70	1	0.193
	no	59/35.33	67/40.12			

p < .20

Table 6

Results of Univariate Logistic Regression: Significant Relationships Between Continuous Variables and Violent Crime Convictions*

Variables	Wald χ^2	p	df
Total Parental Rejection Score	2.65	0.1035	1
Total Father Rejection Score	2.45	0.1172	1
Quantity/Frequency Index	2.65	0.1036	1
Beck Depression Inventory	9.86	0.0017	1
Age at Time of Incarceration	5.91	0.0151	1
Attention Deficit Hyperactivity Disorder	2.20	0.1383	1
Conduct Disorder	2.37	0.1237	1

p < .25

*Note: The betas (parameter estimates), standard errors, and odds ratios are not reported here as the criteria for inclusion in later analyses used only the probability associated with the Wald chi square.

Table 7

Results of Multivariate Logistic Regression: Significant Parent Variables

Variables	β	S.E.	Wald χ^2	df	p	Odds Ratio (95% Confidence Interval)
Father abused alcohol and/or drugs	0.5846	.3218	3.3002	1	.0693	1.794 (0.955, 3.371)
Mother abused alcohol and/or drugs	-0.4046	.3353	1.4559	1	.2276	0.667 (0.346, 1.287)
Father's rejection	0.0223	.0118	3.5454	1	.0597	1.023 (1.000, 1.020)
Mother's rejection	0.0166	.0127	1.6990	1	.1924	1.017 (1.042, 0.992)
Mother's warmth	0.0274	.0159	2.9727	1	.0847	1.028 (0.996, 1.060)
Father's overprotection	-0.0332	.0201	2.7373	1	.0980	0.967 (0.930, 1.006)
Not raised by both biological parents	-1.2212	.5422	5.0730	1	.0243	0.295 (0.102, 0.853)

p < .25

Table 8

Results of Multivariate Logistic Regression: Significant Variables from the Intermediate Self Substance Abuse Model

Variables	β	S.E.	Wald X^2	df	p	Odds Ratio (95% Confidence Interval)
Alcoholism1*	1.1007	.8575	1.6478	1	.1993	3.006 (0.560, 16.142)
Alcoholism2**	1.0994	.8806	1.5586	1	.2119	3.002 (0.534, 16.867)
Intoxication at Time of Crime 1*	0.9988	.4115	5.8906	1	.0152	2.715 (1.212, 6.082)
Intoxication at Time of Crime 2**	1.2066	.4356	7.6744	1	.0056	3.342 (1.423, 7.849)
Age First Used Alcohol***	-0.0606	.0385	2.4742	1	.1157	0.941 (0.873, 1.015)
Drug Addiction*	-0.8609	.4076	4.4617	1	.0347	0.423 (0.190, 0.940)
Drug Addiction**	-0.8334	.4426	3.5452	1	.0597	0.435 (1.035, 0.183)

$p < .25$

* Refers to intermediate model of all self substance abuse variables.

** Refers to intermediate model of all self concurrent variables.

*** Refers to intermediate model of self: developmental variables.

Table 9

Results of Multivariate Logistic Regression: Significant Self Variables (excluding substance abuse variables)

Variables	β	S.E.	Wald X^2	df	p	Odds Ratio (95% Confidence Interval)
Sexually Abused	0.6195	.3645	2.8880	1	.0892	1.858 (0.909, 3.796)
WAIS: R estimate	-0.0192	.0147	1.7138	1	.1905	0.981 (0.953, 1.010)
Conduct Disorder	0.1365	.0898	2.3084	1	.1287	1.146 (0.961, 1.367)
Age when first used alcohol	-0.0606	.0385	2.4742	1	.1157	0.941 (1.015, 0.873)
Intoxication at time of crime	1.2066	.4356	7.6744	1	.0056	3.342 (1.423, 7.849)
Alcoholism*	1.0944	.8806	1.5586	1	.2119	3.002 (16.867, 0.534)
Drug Addiction*	-0.8334	.4426	3.5452	1	.0597	0.435 (1.035, 0.183)
Previous Incarcerations	-1.4053	.4027	12.1767	1	.0005	0.245 (0.111, 0.540)
Table 9 continues						

Table 9 continued

Variables	β	S.E.	Wald X^2	df	p	Odds Ratio (95% Confidence Interval)
Younger than 21 years	1.2662	.5822	4.7304	1	.0296	3.548 (1.133, 11.104)
Beck Depression Inventory	0.0742	.0238	9.7214	1	.0018	1.077 (1.028, 1.129)
State Anxiety Test	-0.0207	.0179	1.3259	1	.2495	0.980 (0.946, 1.015)

$p < .25$

*Self-report from SAFT

Table 10

Results of Multivariate Logistic Regression: Significant Socioeconomic Variables

Variables	β	S.E.	Wald χ^2	df	p	Odds Ratio (95% Confidence Interval)
Younger than 21 years	1.1455	.5505	4.3303	1	.0374	3.144 (1.069, 9.249)
Previous Incarcerations	-1.4251	.3616	15.5321	1	.0001	0.240 (0.118, 0.489)
Serious Impoverishment	0.4875	.4066	1.4375	1	.2305	1.628 (0.734, 3.613)
Nonwhite Race (developmental model)	-0.3684	.3205	1.3216	1	.2503	0.692 (0.369, 1.297)

p < .25

Table 11

Results of Multivariate Logistic Regression: Final Child/Adolescent Predictor Model

Variables	β	S.E.	Wald X^2	p	Odds Ratio (95% Confidence Interval)
Not raised by both bio parents	-1.0414	.6306	2.7272	.0987	0.353 (0.103, 1.215)
Sexually Abused	0.7607	.3695	4.2385	.0395	2.140 (1.037, 4.415)

p < .15

Table 12

Classification Table for Childhood/Adolescent Model

		<u>Predicted</u>		<u>Percent Correct</u>
		Convicted--	Convicted +	
<u>Observed</u>	Convicted--	65	19	77.38%
	Convicted +	49	34	40.96%
				<u>Overall:</u> 59.17%

Table 13

Results of Multivariate Logistic Regression: Concurrent Predictor Model

Variables	β	S.E.	Wald χ^2	p	Odds Ratio (95% Confidence Interval)
Younger than 21 years old *	1.1391	.5792	3.8686	.0492	3.124 (1.004, 9.721)
Previous Incarcerations	-1.8779	.4368	18.4818	.0001	0.153 (0.021, 0.360)
Intoxication at time of crime	1.3141	.4435	8.7797	.0030	3.721 (1.560, 8.876)
Drug addiction	-0.7176	.4360	2.7088	.0998	0.488 (0.208, 1.147)
Depression**	0.1015	.0301	11.3491	.0008	1.107 (1.043, 1.174)
Anxiety**	-0.0325	.0215	2.2912	.1301	0.968 (0.928, 1.010)

p < .15

* At time of current crime

** At time of data collection

Table 14

Classification Table for Concurrent Model

		<u>Predicted</u>		<u>Percent Correct</u>
		Convicted--	Convicted+	
<u>Observed</u>	Convicted--	68	16	80.95%
	Convicted+	23	60	72.29%
				<u>Overall:</u> 76.62%

Table 15

Results of Multivariate Logistic Regression: Comprehensive Predictor Model

Variables	β	S.E.	Wald χ^2	p	Odds Ratio (95% Confidence Interval)
Mothers' abuse of alcohol and/or drugs	-0.9122	.4669	3.1866	.0507	0.402 (0.161, 1.003)
Not raised by both biological parents	-1.8321	.8310	4.8503	.0276	0.160 (0.031, 0.817)
Drug addiction	-0.9362	.4932	3.6028	.0577	0.392 (0.149, 1.031)
Intoxication at time of current crime	1.7810	.4986	12.7621	.0004	5.936 (2.234, 15.722)
Previous incarcerations	-1.9530	.4805	16.5194	.0001	0.142 (0.055, 0.364)
Younger than 21 years*	1.6081	.6703	5.7563	.0164	4.993 (1.342, 18.576)
Depression**	0.0965	.0323	8.9011	.0029	1.101 (1.034, 1.173)
Anxiety**	-0.0369	.0243	2.2916	.1301	0.964 (0.919, 1.011)

p < .15

* At time of crime

** At time of data collection

Table 16

Classification Table for Comprehensive Model

		<u>Predicted</u>		<u>Percent Correct</u>
		Convicted--	Convicted+	
<u>Observed</u>	Convicted--	69	15	82.14%
	Convicted+	22	61	73.49%
				<u>Overall:</u> 77.81%

Table 17

Comparison of Results of Stepwise Logistic Regression Analyses of the Relationship Between Intoxication and Both Self-Reported Violent Crime and Official Record of Conviction for Violent Crime

Analysis	β	S.E.	Wald χ^2	df	p	Odds Ratio (95% Confidence Interval)
<u>Univariate:</u>						
Violent Crime	0.7833	.3626	4.6667	1	.0308	2.189 (1.075, 4.455)
Conviction of Violent Crime	0.6766	.3556	3.6208	1	.0571	0.967 (0.980, 0.949)
<u>Self-substance abuse:</u>						
Violent Crime	0.8712	.3969	4.8190	1	.0218	2.390 (1.097, 5.202)
Conviction of Violent Crime	0.9988	.4115	5.8906	1	.0152	2.715 (1.212, 6.082)
<u>Self-concurrent:</u>						
--Violent Crime	0.9551	.4627	4.2613	1	.0390	2.599 (1.049, 6.436)
--Conviction of Violent Crime	1.2066	.4356	7.6744	1	.0056	3.342 (1.423, 7.849)
<u>Comprehensive:</u>						
--Violent Crime	1.0711	.4307	6.1854	1	.0129	2.919 (1.254, 6.788)
--Conviction of Violent Crime	1.7810	.4986	12.7621	1	.0004	5.936 (2.234, 15.722)

Appendix B

Variable names, descriptions, and construction for analysis

Parent Variables (Original variable name from data base)

FSUBSAB: father abused both alcohol and drugs (F=3).
MSUBSAB: mother abused both alcohol and drugs (M=3).
FDRUG: father abused drugs (F=2 and/or 3).
FDRUG1: father abused drugs only (F=2).
MDRUG: mother abused drugs (M=2 and/or 3).
MDRUG1: mother abused drugs only (M=2).
FALC: father abused alcohol (F=1 and/or 3).
FALC1: father abused alcohol only (F=1).
MALC: mother abused alcohol (M=1 and/or 3).
MALC1: mother abused alcohol only (M=1).
PBOTHSA: both parents abused alcohol and drugs.
PBOTHA: both parents abused alcohol only.
PBOTHD: both parents abused drugs only.
PARNTUSE: both parents abused either alcohol or drugs.
FUSER: father addicted to any substance(s).
MUSER: mother addicted to any substance(s).
REJECTOT: total EMBU factor score for parental rejection items.
REJECTF: total EMBU factor score for father's rejection items.
REJECTM: total EMBU factor score for mother's rejection items.
WARMTOT: total EMBU factor score for parental warmth items.
WARMF: total EMBU factor score for father's warmth items.
WARMM: total EMBU factors score for mother's warmth items.
FAVSBTOT: total EMBU factors score for parental favors subject items.
FAVSUBF: total EMBU factor score for father's favors subject items.
FAVSUBM: total EMBU factor score for mother's favors subject items.
OVPRTOT: total EMBU factor score for parental overprotection items.
OVPRPROF: total EMBU factor score for father's overprotection items.
OVPRPROM: total EMBU factor score for mother's overprotection items.
PCRIM: at least one parents has been incarcerated.
FAMDSRPT: family disruption measured by endorsing an item (ADOPTED) indicating whether or not they were raised by both natural parents on the Substance Abuse Family Tree.
UNKNOWNF: presence of #6 on F on the Substance Abuse Family Tree indicating that the subject did not know father.
UNKNOWNM: presence of #6 on M on the Substance Abuse Family Tree indicating that the subject did not know mother.

Self Variables (VARIABLES):

INTCAT: intoxication at time of crime.
SSUBSAB: combined alcohol and drug abuse (YOU=3).

SALC: alcohol abuse (YOU=1).
SDRUG: drug abuse (YOU=2).
SASEV: severity of substance abuse in terms of the number of negative consequences (CONSTOT) reported (SASEV=0; if CONSTOT $\geq$ 4 then SASEV=1).
DRINK1: reported age when first drank alcohol.
DRUNK1: reported age when first became drunk on alcohol.
DRUNK: reported first drunk at age 14 or younger.
QFTOT: total score on the Quantity Frequency Index of the Alcohol Use Questionnaire.
QFALC: dichotomous variable derived from QFTOT indicating alcoholism ($\geq$ 4.00).
PROBDRKR: self-reported problem drinking.
CHRONIC: alcoholic drinking for more than two years.
LUSH: daily drinking with QFTOT qualifying as alcoholic ($\geq$ 4.00).
XBLACK: number of reported blackouts.
BLACKOUT: dichotomous variable indicating presence or absence of reported blackouts.
YRSPROB: reported number of years that alcohol has been a problem.
DRGABUSE: dichotomous variable indicating history of self-reported drug abuse.
EARLYUSE: dichotomous variable indicating initiation of alcohol use at 12 years or younger.
IV: indicates intravenous drug use.
BECK: The score from the Beck Depression Inventory
AI: The score from the State/Trait Anxiety Instrument.
WAISR: predicted Wechsler Adult Intelligence Scale: Revised score using Shipley verbal and abstract scores and the Shipley Manual.
TOTSXEXP: sum of scores from the Sexual Abuse Scale.
SXAB: an additional measure of sexual abuse (sxab=0; if totsxexp $\geq$ 8 then sxab=1).
PHYAB: a measure of physical abuse when participant positively endorsed one of four EMBU items representing physical abuse (phyab=0; if CMM56 > 1 or CMM59 > 1 or CMF56 > 1 or CMF59 > 1).
CHILDREN: participant reports having child(ren).
AGEPREG: age in years when first pregnant.
EARLYPG: indicates first pregnancy at 14 years or younger.
PRVINCAR: participant reports previous incarcerations.
HSGRAD: participant reports at least 12 years of school (hsgrad=0; if educ $\geq$ 12 then hsgrad=1).
AGE: age of participant at time of study.

Dissertation: Female Criminal Violence

AGEINCAR: age of participant at time of crime for which they are currently serving time.

AGECAT: dichotomous variable constructed to look at differences between groups 25 years old and younger versus all others (agecat=0; if ageincar LE 25 then agecat=1).

ADHD: score on the adhd scale of the Childhood Questionnaire.

LD: score on the ld (learning disabilities) scale of the childhood Questionnaire.

CONDUCT: score on the conduct scale of the Childhood Questionnaire.

Socioeconomic Variables:

RACE: represents 5 categories (1 = white, 2 = african-american, 3 = hispanic, 4 = native american, and 5 = other).

RACEVAR: represents a dichotomous variable comparing white to all other categories (RACEVAR=0; if race > 1 then RACEVAR=1).

EMPLOYED: participants' reported employment or no employment at time of current crime.

EDUC: number of years of education reported by participant.

LOWEDUC: indicates presence or absence of less than eight number of years of education.

SES: Hollingshead score reflecting both years of education and occupation.

LOWSES: indicates presence or absence of an ses score in the lowest quartile.

ASSIST: participants' reported yes or no to being on public assistance at time of current crime.

RELSNT: participants' reported yes or no to having relatives who had been incarcerated.

OFFPRIM: A categorical variable classifying current crime: violent, property, and drug.

VICONV: indicates presence or absence of an official Oklahoma State Bureau of Investigation (OSBI) record of a violent crime conviction.

VIOLENT: indicates self reported violent crime.

HOMICIDE: indicates presence or absence of a conviction for manslaughter or murder.

Appendix C

Prospectus

**An Exploratory Analysis of
Risk Factors For Criminal Violence By Women**

Chapter 1

Introduction

The Panel for the Understanding and Control of Violent Behavior (Reiss & Roth, 1994) recommended a public health approach to explore risk factors associated with violence. Also needed is research on violent female offenders to correct the disproportionately low representation of women in the empirical literature on violence (Sommers & Baskin, 1993; 1994)

The focus of much of the new violence research is on the contributions of biological, psychosocial, situational, and social factors as they relate to the development of violent behavior (Klassen & O'Connor, 1994; Reiss & Roth, 1994; Spaccarelli, Coatsworth, & Bowden, 1995). Research indicates that a propensity for violent behaviors is the result of complex interactions between social structures, psychosocial factors, and biological processes (Hawkins, 1995; Rosenberg & Mercy, 1991b). Numerous risk factors for violent offending have been identified.

Problem Parameters

Although violent crime rates have decreased over the last few years, since the 1950's, national and local violent crime rates have increased sharply (Dillingham, 1991; Rosenberg & Mercy, 1991). Approximately 9.9 million violent crimes were

reported in the United States in 1994. Similarly, Oklahoma state violent crime rates have jumped almost 60 percent in the last decade, from nearly 14,000 incidents in 1987 to 21,700 in 1995 (Oklahoma State Bureau of Investigation, 1995). Oklahoma has the highest rate of female incarceration per capita in the United States (Marcus-Mendoza, Sargent, & Ho, 1993). A recent analysis of national crime rate patterns and trends supported the conclusion that violence-related health problems are expected to increase over the next three decades (Murray & Lopez, 1996).

Although women are responsible for only a fraction of all violent crimes, their acts of violence present a significant public health problem (Kruttschnitt, 1994; Simon & Landis, 1991; Wolfgang, 1958). Women committed approximately one million violent crimes in 1994 (U.S. Department of Justice, 1994).

Under-representation of Women in Violence Studies

There is a striking lack of research on violent female offenders (Kruttschnitt, 1994; Sommers & Baskin, 1994) limiting violence theories as essentially special theories of male-perpetrated violence (Simon & Landis, 1991). This deficiency is primarily the result of two general problems in violence research. First, violent women have received less research attention because violent female offending has been perceived as less of a social burden than that of males. Second, the majority of studies of violent women have been operating on the assumption that violent women are essentially different than violent men. This perspective virtually ignores several

important risk factors for violence. Violent women have been depicted as more pathological than their male counterparts, i.e., they injure and kill because they are deformed and/or crazy (see early work of Lombroso, 1993). Sommers and Baskin (1993) argued that research on violent women does not reflect the theoretical progress made over the last few decades based on the integration of control, strain, learning, and ecological perspectives. Progress has been made toward a greater understanding of violence in female populations but several important gaps remain.

Recent research indicates that violent female offenders share many background characteristics with their male counterparts but their crimes are often carried out quite differently (Goetting, 1988; Kruttschnitt, 1994; McCord, 1979; Rosenbaum & O'Leary, 1981; Simon & Landis, 1991). For example, a woman is more likely than a man to kill her spouse or child (Goetting, 1988; Wolfgang, 1958). Unlike violent men, homicidal women are less likely to plan their crime which often occurs in a rage. Moreover, she is more likely than a man to report her crime, stay with her victim until help arrives, and less likely to commit suicide following the murder (Goetting, 1987; 1988).

Although only 10% of arrests for violent crime implicate a female offender, female-perpetrated violence presents a serious public health problem that the criminal justice system is ill-equipped to handle (Hawkins, 1995; Monahan & Steadman, 1994; Rosenberg & Mercy, 1991; U.S. Department of Justice, 1996). A

long history of gender stereotyping coupled with a lack of attention to the needs of at-risk and actively offending females (juvenile and adult) have seriously limited the ability of the justice system to effectively implement prevention, incapacitation, and rehabilitation programs (U.S. Department of Justice, 1996).

Risk Factor Approach

The risk factor approach is grounded in the public health tradition (Coie et al., 1993; Steadman, et al, 1994). It is especially useful for developing prevention strategies. Historically, studies of violence were guided by legal definitions of violent crime and "dangerousness." More recently, innovative prevention strategies have been developed by looking at violence as a health problem like heart disease or cancer instead of a "crime" (Hawkins, 1995; Monahan & Steadman, 1994; Rosenberg & Mercy, 1991b). In fact, officials of the U.S. Department of Justice are currently focusing on the development of violence prevention strategies that are based on an understanding of the combined cumulative effects of both risk and protective factors that have been associated with violent behavior (Hawkins, 1995; Steadman et al., 1994).

The empirical evidence from the vulnerability and resilience literature showed that multiple risk factors have cumulative effects on the development of psychopathology, deviance, and criminality (Cicchetti, Rogosch, Lynch, & Holt,

1993; Yoshikawa, 1994). In his classical study, Rutter (1979) found that there is a multiplicative relationship between the number of risk factors and the likelihood of disorder. Supporting evidence for the cumulative force of multiple risks on social development has been found in prospective cohorts in both Minneapolis (Masten, 1989; cited in Yoshikawa, 1994) and the Kauai study (Werner & Smith, 1982; 1992; as cited in Yoshikawa, 1994). Risk factors can also be characterized in terms of stability, proximity to the violent event, and power of prediction.

Klassen and O'Connor (1994) recommended identifying differential risk factors for subclasses of victims and offenders. This would improve risk management in various high risk groups such as battered women or psychiatric populations. Serious violent offenders differ from less serious offenders (Fagan & Wexler, 1987; Lattimore, Visser, & Linster, 1995). Inmate rehabilitation and early release programs can be improved with knowledge of the differential risk factor patterns of female offenders.

Summary

Data derived with standardized research techniques strengthens public policy debate (Murray & Lopez, 1996). The current fight over limited resources favors "get tough" policies over prevention (Travis, 1995). This policy persists despite substantial evidence that primary prevention strategies aimed at high risk groups are

more cost effective and humane (Murray & Lopez, 1996). Empirical data can inform arguments that advocate prevention strategies aimed at high risk women.

The purpose of this study is to explore known risk and protective factors for violent crime in a convenience sample of incarcerated female offenders. It is hoped that this risk analysis will provide data on violent females that will strengthen prediction of violence in at-risk populations.

Research Question

Variables that reflect risk and protective factors identified in the empirical literature will be pulled from the prison data set and analyzed with logistic regression procedures as predictors of convictions for violent crimes. It is hypothesized that predictor variables increasing risk for violent offending include parental rejection, parental substance abuse, family disorganization, sexual abuse, lower intelligence and self substance abuse. Conversely, the hypothesized predictor variables that decrease risk for violent offending are higher intelligence, parental warmth, and parental acceptance. The role of physical abuse in predicting adult violent offending for women is not certain.

Chapter Two

Literature Review

Introduction

Several risk factors have been linked to the development of violent behavior. These risk factors represent traits, tendencies, and social processes that contribute to social development over time. This study is guided by a biopsychosocial developmental perspective that is consistent with a social learning framework (Klassen & O'Connor, 1994; Patterson, DeBaryshe, & Ramsey, 1989).

Violence is a naturally occurring, ubiquitous characteristic of human social systems, with phenomena ranging from highly organized (e.g. war) to extremely disorganized forms of violence (e.g. impulsive domestic violence). The study of crime and violence has been traditionally associated with the behavioral sciences of sociology, criminology, psychology, and psychiatry (Monahan & Steadman, 1994). Most researchers have tried to explain violent behavior with theoretical constructs ranging from defects in the social environment to innate individual deficits (Sullivan-Cosetti, 1988). Present trends in violence research reflect an integrative approach exemplified in a public health model of biopsychosocial risk factors empirically linked to violent behavior (Hawkins, 1995; Rosenberg & Mercy, 1991).

Theories of Violence

Theories of crime and violence abound (Wilson & Herrnstein, 1985).

Although crime and violence theorists have been prolific, the present knowledge of the etiology and development of assaultive violence is incomplete (Reiss & Roth, 1994). Various theoretical approaches offer valuable perspectives of violent behavior, but an integrated model of the complex interactive effects of the multiple risk factors associated with violence has not yet been fully developed (Hawkins, 1995; Reiss & Roth, 1994; Rosenberg & Mercy, 1991b). Klassen and O'Connor (1994) explained the relationships of the variables to violence primarily in terms of control and attachment theories.

The women's movement stimulated new research on female offenders.

Sommers and Baskin (1994) argued that the conceptualization of studies of female offenders has been too narrowly conceived; that the literature reflects a tendency to ignore developments in criminological theory and research based on the synthesis of control, strain, learning, and ecological approaches.

Sociological theories have explored predominately social forces that promote violent behavior in groups that are defined according to age, gender, socioeconomic status, and race. Psychological theories have explored both intra-personal and interpersonal aspects of violence. Psychological theories of violence link personality types, social learning processes, and developmental factors to violent behavior. The empirical evidence indicates that there are intra-individual factors, e.g. impulsiveness, associated with aggression that might differentiate between various kinds of criminal

violence like child abuse, spousal homicide, and stranger assault. The field of evolutionary psychology addresses the adaptive value of aggressive and expropriative behaviors (Cohen & Machalek, 1988; Wilson & Daly, 1992)

Bandura's (1973) social learning theory of aggression advanced the idea that aggression is learned from watching valued people in the environment behave aggressively. Aggression can be learned through reinforcement of aggressive behavior and vicariously (modeling) by watching others. The maintenance of aggressive behavior is subject to the principles of learning theory, i.e., reinforcement such that behaviors that are reinforced will be repeated. Tests of social learning theory have produced mixed results. It has received some empirical support and continues to influence theorizing about aggression and violence (Eron, 1987). Developmental theories focus on the differential effects of parenting practices and family characteristics on the quality of the parent-child bond, individual frustration tolerance, flexible internal self-control, and moral development and their subsequent relationships to an individual's propensity to engage in violent behavior.

Personality theories of violence are rooted in the psychometric study of known offenders and delinquents. Robins and his colleagues identified three replicable personality types that have clear implications for understanding personality correlates of violent behavior (Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996): resilient, over-controlled, and under-controlled. Ego control refers to the ability to inhibit rather than express impulses. Ego resiliency refers to the ability to respond

flexibly rather than rigidly according to the characteristics of the situation, especially in stressful and frustrating conditions (Robins et al., 1996). These constructs reflect intra-individual regulatory processes that affect behavior across situations.

Whereas the under-controlled personality is associated with impulsivity and risk-taking, the over-controlled personality is associated with a rigid internal control system that lacks flexibility in terms of responsiveness to new circumstances. The over-controlled personality is associated with unpredictable violent outbursts. Ego control and ego resiliency have been useful constructs in personality and developmental research. These types overlap significantly with Gottfredson and Hirschi's (1990) conceptualization of self-control.

Gottfredson and Hirschi's (1990) general theory of crime represents the newest version of control theory. It has received a growing body of empirical support (Arneklev, Grasmick, Tittle, & Bursik, 1993; Grasmick, Tittle, Bursik, & Arneklev, 1993). It emphasizes the central role of self-control and the behavioral implications of the differing levels of self-control. To the extent that elements of self-control affect aggression and violent behavior, control theory nests nicely within a developmental social learning theory of violence.

The theoretical perspective that guides this study is a social learning developmental perspective (Laub & Lauritsen, 1993) with a focus on the development of self-control. A developmental framework is used to look at the emergence of risk markers, their stability over time, and the influence of age-related transitions (into

school, into employment, into marriage) that change the ways that various risk markers for violent behavior may be expressed at different life stages.

The Empirical Study of Violence

Progress in the empirical analysis of violence is evident in the development of multiple factor models. They are more powerful than univariate models that predict violence because the focus was limited to bad genes or bad parents. The series of books on violence sponsored by the National Research Council (see Reiss & Roth, 1993) boosted research progress by publishing comprehensive summaries of empirical work in specific domains (e.g., domestic violence) with recommendations made for future research. Several correlates of violence have been identified, but how they interact remains to be fully specified, especially for violent women. Promising work addressing risk factors associated with violence is currently in progress in a study known as the MacArthur Risk Assessment Study (Steadman et al., 1994).

Violence can be conceptualized as a heterogeneous and continuous variable with each individual characterized by a baseline rate for violent behavior. This can be called the propensity for violence. Klassen and O'Connor (1994) proposed that social learning processes that lead to the acquisition and maintenance of aggressive behavior are the direct cause of the propensity for violence with all other variables interacting with that process.

Definitions of Violence

Interpersonal violence is a conflict resolution strategy employed to resolve the competing interests of two or more individuals. Tedeschi and Felson (1994) defined aggression and violence as coercive strategies employed to inflict harm or force compliance (Tedeschi & Felson, 1994). The dynamics of conflicts can be characterized falling somewhere along a continuum from coercive to cooperative (Argyle, 1991). Individuals vary in terms of their baseline propensity to use aggressive and violent strategies (Klassen & O'Connor, 1994). To the extent to which the victim's rights have been violated or harm done, some forms of coercion are considered deviant and/or illegal. For some, it is largely a matter of a learned approach to social exchange (Patterson, DeBaryshe, & Ramsey, 1989) though for others it is more a matter of lacking the resources, social and material, to resolve conflict with cooperative methods. These are not mutually exclusive.

Definitions of deviance and criminal change as values shift and laws are modified. For example, child abuse and spouse abuse were not illegal prior to the 1960's (Dixon, 1995). Gottfredson and Hirschi (1990) emphasized that deviance and crime go hand in hand; criminal offenders also engage in a wide range of other deviant behavior. They employ the term criminality to refer to the tendency of an individual to break the law. The chief difference between deviance and criminality is the legal status of the behavior. Deviant behavior is not always criminal, but criminal behavior is usually deviant.

The domain of interpersonal violence includes the entire realm of destructive human behavior from infanticide to genocide. For this study, following the Panel on the Understanding and Control of Violent Behavior, criminal violence is defined as illegal behaviors by individuals that intentionally threaten, attempt, or inflict physical harm on others (Reiss & Roth, 1994). The definitions of violent crimes used in this study are derived from the Oklahoma Statutes because the Oklahoma courts these into convictions of violent crime: murder, manslaughter, sexual assault, rape, robbery, other assaults, and child abuse.

This study is concerned with female-perpetrated interpersonal violent offending. Thus, suicide, though illegal, will not be included in this study. Another crime worthy of special mention is sexual assault. This is usually thought of as a male-perpetrated act. However, recent studies have revealed that contrary to predominant social stereotypes, some lesbian couples do engage in assaultive behavior. There is at least one known case of a sexual assault conviction within this sample of female offenders. Therefore, sexual assault is included. In summary, this study will focus on female-perpetrated violent crime.

Correlates of Violence

Although this study proposes an analysis of risk factors in a sample of female offenders, this review will also include studies that sampled male offender populations. It has been determined that the backgrounds of male and female criminals are quite similar (Felthous & Yudowitz, 1977; Hodgins, 1992; Kruttschnitt,

1993; 1994; McCord, 1979; Simon & Baxter, 1989; Yoshikawa, 1994). Although the backgrounds are similar, significant gender differences are observed in arrest rates and how crimes are carried out (Cohen & Machalek, 1988; Kruttschnitt, 1993; 1994; Robertson, Bankier, & Schwartz, 1987; Robertson, 1990; Simon & Baxter, 1989; Sommers & Baskin, 1994).

The organization of this review will follow Yoshikawa's (1994) heuristic for grouping risk factors: person-centered, family-centered, and contextual factors. The factors selected for the present study will be emphasized in the review though other related factors are included to illustrate important developmental processes associated with criminal violence.

Person-centered factors include genetic vulnerability, cognitive abilities, gender, perinatal risk, temperament, psychopathology, and substance abuse. Family-centered factors include parenting styles, parental child-rearing practices, parent-child attachment, parent-perpetrated child abuse, and other parental characteristics, e.g., quality of marital conflict, parental criminality, parental substance abuse, and parental psychopathology. Contextual factors include socioeconomic status (family and community), community crime, levels of community violence, and cultural valuations of violent behavior. Affixing the qualifier 'centered' is intended to communicate that although the discussion may be focused on the person, family, or context, specific factors are understood to be part of a complex and dynamic social process.

Person-centered Risk Factors

Intra-individual risk factors for violent crime cover the life span. These characteristics influence the development and the behavioral expression of self-control, which directly and indirectly influence individual tendencies toward aggressive and violent behaviors (Gottfredson & Hirschi, 1990).

There is a general consensus evident in the research literature that adult violence has its origins in childhood (McCord, 1979; 1988; Reiss & Roth, 1993). What a risk factor looks like and how it is measured is largely a function of the developmental stage of the individual. For example, one hypothetical pathway from infancy to adult violence can be labelled psychopathology. Psychopathology is a modest predictor of aggression and violence at each developmental stage (Monahan, & Steadman, 1994). It might begin with an infant with difficult temperament coupled with an adverse parent-child fit. This leads to the development of significant childhood behavioral disorders, e.g., conduct disorder, that in turn lead to the development of antisocial personality disorder in adulthood.

Serious juvenile delinquency is usually preceded by antisocial behavior in childhood and is a strong predictor of adult violence (Klassen & O'Connor, 1994; Yoshikawa, 1994). Moreover, serious juvenile delinquency is often associated with mental disorder and substance abuse, increasing the cumulative risk for juvenile and adult violent offending (Hawkins, 1995). In adulthood joblessness and unstable personal relationships surface as risk factors in the lives of violence-prone individuals.

Genetic vulnerability

The issue of genetic transmission of aggressive and violent behavior is still earnestly debated (Plomin, 1994; Wright, 1995). Individual differences in the propensity for violence are believed to be the result of the interplay between genetics and experience (Reiss & Roth, 1993; Plomin, 1994; Tedeschi & Felson, 1994). Interestingly, heritability may be more important in the development of adult criminality than delinquency (Rutter, 1987; Yoshikawa, 1994), suggesting that genes contribute effects that influence the persistence of antisocial behavior. However, Tedeschi and Felson (1994) concluded that genes have negligible influence over the expression of aggression and violence. Similarly, Gottfredson and Hirschi (1990) also argued that the research evidence (twin studies and adoption studies) examining the children of incarcerated offenders does not support genetic explanations of crime. It may be that genes influence the expression of aggression and violence indirectly through the 'goodness of fit' between the parent and child (Chess & Thomas, 1990) to the extent that the parent successfully responds to the individual needs of their children.

Gender

Gender may confer risk and/or protection for criminal violence. Kellam, Rebok, Ialongo, and Mayer (1994) concluded that elementary school girls were not nearly as aggressive as their male peers. The authors stated that the gender effects remained unclarified in terms of their determinants, other than the fact that girls

were much less aggressive than boys in the early elementary grades. The finding that boys were more aggressive than girls is consistent with the bulk of the literature on gender differences and aggression. The rates of aggressive behaviors for girls and boys start out equal, diverging in early childhood (Eagly & Steffen, 1986; Hyde, 1984; 1986; Kruttschnitt, 1993). However, like aggressive males, aggressive females tend to stay that way. Yoshikawa (1994) noted that aggression stability coefficients were the same for girls as well as boys. Campbell (1995) reported that men and women attach different meanings to acts of aggression; women view it as loss of control whereas men view it as instrumental and justified.

Perinatal risk

Perinatal injury (maternal drug and alcohol abuse, birth trauma, etc.) is a known etiological factor for violent behavior, especially in unstable families (Kandel & Mednick, 1991; cited by Laub & Lauritsen, 1993; Reiss & Roth, 1993). Perinatal injuries increase risk of neurological impairment that contributes to baseline rates for aggressive behavior and subsequent control disorders. The lack of prenatal care is a major risk factor for perinatal injury.

Temperament

Difficult childhood temperament can contribute to the development of violent behavior (Laub & Lauritsen, 1993; White, Moffitt, Earls, Robins, & Silva, 1990). Preschool children who tend to be fearless, very active, and unmanageable are at greater risk for developing antisocial traits in later childhood, adolescence, and

adulthood (Laub & Lauritsen, 1993). High activity, impulsivity, and distractibility are all risk factors for problems with self-control. These characteristics interact significantly with intelligence (White, et al., 1994) such that low IQ is associated with aggression in childhood and adolescence (Farrington, 1991). Cognitive and behavioral inhibition have been implicated as important variables for predicting base rates of violent behavior (Barratt, 1994).

The construct 'approach set' refers to the approach-withdrawal tendencies of individuals to new situations (Chess & Thomas, 1990). Kopp (1989) related primary approach-avoidance behaviors in infancy as precursors of emotional regulation and expressiveness. Through social learning processes within the caretaker-child relationship the infant acquires an emotional repertoire that can be characterized by more or less adaptive control strategies depending on environmental contingencies (Kopp, 1989). Emotional dysregulations have been linked to violent behavior (Reiss & Roth, 1994).

The ratio of inhibition to disinhibition is a personal characteristic that is trait-like. This may predict the development of risk-taking behavior. However, as Gottfredson and Hirschi (1990) emphasized repeatedly, the presence of a risk factor does not cause negative psychosocial outcomes. A child with "difficult" temperament can be effectively socialized. Thus, the roots of aggression and violence found in temperamental predisposition are mediated through the parent-child relationship (Kellam, et al., 1994; Chess & Thomas, 1990). This is consistent with the research

findings indicating empirical differences between temperament and behavior problems (Sheeber, 1995).

Cognitive Abilities

During most of this century, the dominance of sociological explanations for crime temporarily obscured the role of intellectual abilities as risk factors for crime and violence (Lilly, Cullen, & Ball, 1995; see Sutherland, 1931; for original discussion regarding the minimal importance attributed to IQ for understanding crime). In contrast, psychological explanations of violence have generally placed greater emphasis on the role of intelligence for explaining violent crime though in varying degrees of explicitness and significance. Current criminological perspectives identify intellectual deficiency as an important risk factor for the development of criminal violence (Cohen & Machalek, 1988; Gottfredson & Hirschi, 1990; Wilson & Herrnstein, 1985).

Intellectual ability has been operationally defined in the research literature by a wide range of cognitive measures: scores on intelligence tests (primarily the Wechsler batteries), school achievement tests, and student's grades. In this discussion, the terms of cognitive ability, intelligence, IQ, and academic achievement will be used interchangeably to refer to a broad range of cognitive processes that are associated with learning, abstract reasoning, decision-making, planning, and self-monitoring. Byrnes (1995) warned researchers about the potential problems of using general (versus specific) abilities as independent variables or co-variates in light of

contemporary views of cognition. For example, recent advances in the study of the construct of impulsivity, a prominent antisocial behavior, raise questions about the validity of many standard intelligence measures in high risk populations because impulsivity increases response error.

The empirical evidence clearly shows that measures of both intelligence and school achievement provide indicators of risk for the development of delinquency (Farrington, 1991; Loeber & Dishion, 1983; Yoshikawa, 1994), adult crime (Herrnstein & Murray, 1994; Gottfredson & Hirschi, 1990), and violence (Hodgins, 1992; Loeber, Green, Keenan, & Lahey, 1995; Widiger & Trull, 1994). The distribution of IQ scores for criminal offenders differs from that of the general population. The average IQ of delinquents is 8 points lower ($SD = 12.5$) than non-delinquents (Lynam, Moffitt, & Stouthamer-Loeber, 1993). Similarly, the average IQ of incarcerated adult offenders is approximately 92 compared to approximately 102 for non-offenders. Serious offenders score even lower than casual offenders. Moreover, individuals who score at the lower end of the IQ distribution commit a disproportionate number of crimes (Gottfredson & Hirschi, 1990; Herrnstein & Murray, 1994).

The resilience literature provides converging evidence for the inverse relationship between intelligence and crime. High risk boys with higher IQ's are less likely than those with lower IQ's to become delinquent (Herrnstein & Murray, 1994; Werner, 1987; cited in Yoshikawa, 1994; Wilson & Herrnstein, 1985). The preventive

effects of higher levels of intelligence have been replicated in other studies (Kandel et al., 1988; White, Moffitt, & Silva, 1989).

Hodgins (1992) found additional evidence for the IQ/crime relationship in a sample of intellectually deficient individuals. In a Swedish birth cohort, she found that intellectually deficient males were five times more likely than normals to commit a violent offense. These findings were even more striking for females. Intellectually deficient women were twenty-five times more likely than normals to commit a violent offense. Hodgins (1992) cautioned that higher crime rates and the prevalence of substance abuse related crime should weaken these relationships in the United States.

Empirical investigations of the relationships between intellectual abilities and violence are problematic. A major measurement issue is the use of various indicators of intelligence. Intellectual ability has been operationalized using IQ scores, academic grades, school achievement tests (Yoshikawa, 1994), and educational placement (Hodgins, 1992). Each instrument and type of measure, e.g., academic or IQ test, presents different difficulties in terms of measurement error and interpretation. Educational placement in special classrooms would include children with learning disorders, confounding the relationship between IQ and learning disorder. Although both intellectual disability and learning disorders have been linked to violent offending, each may represent different developmental pathways that are marked by other distinct correlates of violence. For example, depressed verbal ability may

impede learning nonaggressive verbal conflict resolution strategies, whereas dyslexia can interfere with positive school attachments and promote deviant peer relationships.

The preponderance of academic indicators found in the research literature suggests that the hypothesized relationship between intelligence and delinquency, crime, and violence is more accurately viewed as a function of success (or lack thereof) in school. In fact, several authors proposed that school problems mediate a wide range of adverse outcomes (Lynam, et al., 1993) including aggression and violence (Loeber, Green, Keenan, & Lahey, 1995). Given the bias towards use of indices derived from educational measures, this discussion might be more accurately described as a review of studies examining the relationship between school success (achievement scores and placement decisions are influenced by several social factors) and criminal violence.

Lynam and his colleagues (1993) noted that at least two possible explanations exist for a potentially spurious link between low IQ and crime: (1) offenders with lower IQ's are more likely to be detected and arrested, and (2) the correlations between low IQ and crime are caused by a third factor, e.g., social class or race, that affects both variables. Lynam et al. (1993) directly assessed these issues, controlling for class, race, and test motivation, and concluded that low IQ is a causal factor in the development of delinquency.

Another significant measurement issue is the extensive overlap between risk

factors for low intelligence with those for violence. Sameroff, Seifer, Baldwin, and Baldwin (1993) identified 10 risk factors for low IQ. Each has been looked at as a risk factor for violence, and four have received substantial support as a predictor of violent behavior: minority status, socioeconomic status, life events (stress), and parenting factors. Sameroff et al. (1993) found that high levels of risk depress IQ scores (controlling for maternal IQ). In addition, when there were three or more risk factors the number was more important than the kind of risk for predicting IQ scores. This supports Rutter's (1979) assertion that degree of risk is more predictive of outcomes than types of risk. These findings emphasize the need to understand the influence of cognitive abilities on violence within the context of other related factors.

Intellectual deficits appear to be risk factors for violent behavior in the presence of other risk variables (Klassen & O'Connor, 1994) like neurological impairment (Klassen & O'Connor, 1994; Lewis et al., 1979; 1985) dysfunctional family environment (Lewis, et al., 1979; 1985; Yoshikawa, 1994), mental disorder (Hodgins, 1992), and cultural tensions (Bernard, 1990). Academic difficulties, family problems, and medical problems interacted in predicting the number and type of violent offenses in a sample of urban delinquents (Cohen, Brook, Cohen, Velez, & Garcia, 1990).

Similarly, Downey and Walker (1992) found that WISC IQ scores were not associated with childhood aggression when family influences were statistically controlled. Children raised in abusive home environments demonstrated lower levels

of intelligence, which were subsequently associated with higher levels of aggression (Downey & Walker, 1992). Consistent with this evidence is the finding that IQ does not significantly predict adult aggression once childhood aggression is taken into account (Huesman, Eron, & Yarmel, 1987). There is scant opposition in the literature to the assumption that unhealthy environments promote antisocial behaviors, particularly for vulnerable individuals.

As noted above, current research in this area is focused on identifying mechanisms by which lowered intelligence increases risk for both violent and nonviolent crime. Most of the hypotheses propose that intelligence plays an important role in the development of self-control, prosocial behavior, and antisocial behavior.

How does intelligence interact with other variables in the commission of aggressive and violent acts? Greater intellectual ability may facilitate learning a wide array of goal-oriented non-violent strategies. Recent research efforts are attempting to clarify various aspects of the interactions between measures of intelligence and antisocial behavior.

White and her colleagues (1994) reported that intelligence and impulsivity are related. In a factor analytic study of impulsivity and its relationship to delinquency, they reported that measures of impulsivity yielded two factors that they labeled cognitive impulsivity and behavioral impulsivity. Both were strongly related to IQ and to serious delinquency. They reasoned that impulsivity and intelligence are

separate but related constructs, suggesting that decreased intellectual ability may increase impulsivity by depressing executive cognitive functions like abstract reasoning, self-monitoring, and initiation of mental effort. They note that the causal order of IQ and cognitive impulsivity is not known. However, deficits in both IQ and impulse control can interfere on several levels with school success setting the stage for developing delinquent behavior. Both delinquency and impulsivity have been associated with violence.

Other aspects of the IQ-violence relationship have been explored. Antisocial traits (separate from DSM-IV diagnostic criteria for Antisocial Personality Disorder assessing violent behavior) in combination with low intelligence have been associated with severity of criminal acts (Heilbrun, 1990; cited in Widiger & Trull, 1994). Longitudinal studies of childhood aggression indicate a strong relation between IQ and aggression (Yoshikawa, 1994). Communication deficits associated with lower IQ's may contribute to the development of aggressive behavior, i.e., low verbal intelligence may limit the range of non-aggressive coping strategies developed by an individual. In the Kauai cohort, the acquisition of age-appropriate language skills at ages 2 and 10 years was associated with decreased risk of developing delinquent behavior (Werner, 1987; cited in Yoshikawa, 1994). Moreover, indicators of language skills are predictors of school achievement scores and poor school achievement is frequently found as an initial precursor for the development of delinquency, adult criminality, and violent crimes.

Gottfredson and Hirschi (1990) related low IQ to criminality as a function of the ability of an individual to form valued attachments to authority figures (parents, teachers). Such mutually beneficial relationships are a central process of socialization. Gottfredson and Hirschi (1990) emphasized that though low IQ can impact socialization, effective socialization is always possible. Violent behavior is mediated by low IQ through its diminishing effects on the development of self-control. They proclaim that contrary to popular views, homicide is the most "mundane and easily explainable crime (p. 31)" Wilson and Herrnstein (1985) also speculated that individuals with lower IQ's exhibit a here-and-now cognitive style that facilitates short-sighted, irresponsible behavior. When interpersonal conflict occurs, resolution strategies are activated: fight or flight. To negotiate mutually satisfying resolution requires learned skills: bargaining, information exchange, problem-solving, determining compensation for the other party, social skills, and potential assistance from third parties (Argyle, 1991). Thus cooperative modes of conflict resolution require skills that are the culmination of a variety of social learning processes. Violence is the antithesis of cooperation.

In summary, intelligence serves as a benchmark for the comparison of new violence predictors; it is one of the most robust correlates of delinquency (White et al., 1994; Hirschi & Hindlehang, 1977). Although the complex interactions between intellectual abilities and violent offending are not fully explicated, it is clear that intellectual deficits interact with other risk factors in a cumulative fashion in the

development of aggression and violence (Yoshikawa, 1994). Many current research questions revolve around the various interpretations of the statistical relationships between measures of intelligence and antisocial behaviors (Lynam, et al., 1993; Rutter, 1987).

Psychopathology

The empirical evidence has clearly established that psychopathology is associated with violence, but the relationship is complex. How psychopathological symptoms lead to violence is not completely understood, except perhaps in the rare instances of psychosis, e.g. auditory command hallucinations. Mental disorder has both developmental (Achenbach, Howell, McConaughy, & Stanger, 1995a; 1995b; Hawkins, 1995; Loeber, Green, Keenan, & Lahey, 1995) and concurrent effects (Swanson, Holzer, Ganju, & Jono, 1990) on aggression and violence.

The developmental precursors of adult violent offending include aggression and norm violations in the family-of-origin, both that of the child and of the parents. Aggressive behaviors can crystallize through social learning. There is strong empirical evidence supporting social learning explanations for the acquisition and maintenance of violent behavior (Bandura, 1973; Klassen & O'Connor, 1994; Patterson et al., 1989; Tedeschi & Felson, 1994). However, the developmental factors that are associated with the persistence of aggressive behavior into adulthood are still being explored (Achenbach, Howell, McConaughy, & Stanger, 1995a; 1995b; Cohen

et al., 1990; Feehan, et al., 1995; Kellam, et al., 1994; Kindlon et al., 1995; Loeber et al., 1995; Robins et al., 1996).

Research assessing DSM IV childhood behavior disorders provides some interesting evidence. Childhood behavior problems, especially conduct problems, have been linked to adult violent offending (Laub & Lauritsen, 1993; Reiss & Roth, 1994). Interestingly, Loeber and Stouthamer-Loeber (1986) reported that parent-child socialization factors predicted subsequent conduct problems and delinquency better than parental criminality. There appears to be a subgroup of males and females (Yoshikawa, 1994) who exhibit extreme behaviors that persist over time (Laub & Lauritsen, 1993). In this subgroup of persistently and severely antisocial individuals we might expect that their pattern of risk factors would reflect greater cumulative risk, i.e., a combination of low SES, low IQ, and severe family disorganization.

Paradoxically, whereas childhood antisocial traits are the best predictors of adolescent and adult antisocial traits, most antisocial children do not become antisocial adults (Laub & Sampson, 1988; Robins, 1978). Laub and Lauritsen (1993) emphasized that predicting aggression, crime, and violence in adulthood from childhood factors is difficult. Individual differences in violent behavior are not simply a function of childhood tendencies. For example, empirical evidence indicates that marital and job stability established in adulthood prevents violent offending in at-risk populations (Laub & Lauritsen, 1993; Sampson & Laub, 1993).

Several studies have explored the relationships between mental disorder and violence addressing etiology, epidemiology, and treatment issues. Using epidemiological data from a community sample, Swanson, Holzer, Ganju, & Jono (1990) found an association between violence and psychiatric disorders. A significant interaction effect was found between major mental illness and substance abuse. Similarly, others have also found increased risk for violence when substance abuse and mental disorder coexist (Abram, 1989; Link & Steuve, 1995). Severe alcoholism combined with a diagnosis of antisocial personality disorder has been linked to homicide recidivism (Tiihonen & Hakola, 1994). Climent and his colleagues (1972; 1973; 1979) reported significant correlations between mental disorder and violence in female prison samples. Personality disorders have also been associated with the propensity for violence in female offenders, especially women under 30 years of age (Brownstone & Swaminath, 1989).

In summary, a wide array of mental disorders have been linked to violent behavior in general, and female violent offending in particular (Eronen, 1995). Many questions remain regarding the nature of the relationship between psychopathology and violence. For many it is a learned behavioral strategy that is one aspect of an adverse lifestyle. A history of victimization is predictive of psychopathology and violent behavior. Predicting violence in individual cases remains a tricky issue; it is a complex and highly dynamic process (Monahan & Steadman, 1996). Data from the Epidemiologic Catchment Area Study clearly shows that mental illness is a

significant, though modest risk for violent behavior (Monahan & Steadman, 1994; 1996; Swanson, Holzer, Ganju, & Jono, 1990; Swanson & Holzer, 1991).

The developmental risk factors associated with adult mental disorder overlap extensively with those for substance abuse and violence. The strong correlations between measures of substance abuse, mental illness, and violence present methodological challenges for those trying to disentangle the complex relationships.

Substance Abuse

Substance abuse plays a major role in the commission of violent crime in the United States (Roth, 1994; Wolfgang, 1958), more so than in other industrialized nations (Hodgins, 1992). The empirical evidence is consistent and clear regarding a positive correlation between violence and alcohol. However, the other psychoactive substances demonstrate a more complicated relationship with violence. The underlying relationships between substance abuse and violence vary across type of substance as well as exhibiting different interactions with mental disorder and history of physical abuse.

The relationships between substance abuse and violence are largely a function of the kinds of behaviors associated with addiction and intoxication. Addiction is associated with chronic risk whereas intoxication adds to acute risk. Moreover, neurological impairment may increase risk through irritability and impulsivity.

Langevin et al. (1987) noted the complex interactions between brain damage, substance abuse, and mental disorder that make their individual contributions to

violent behavior difficult to determine. Alcoholism can produce both physical and psychological pathology (Brage, Garibaldi, Intaglietta, Buenaventura, & Famulari, 1972; cited by Langevin et al. 1987); specific diagnoses, such as organic brain syndrome and antisocial personality disorder have been associated with both alcoholism (Helzer, Robins, & Miller, 1985) and violence (Sutker, Bugg, & West, 1993; cited by Widiger & Trull, 1994). Many of the same variables associated with substance abuse are also related to violence and mental disorder. For example, Hatzichristou and Papadatos (1993) found that poor family management practices, excessively severe or inconsistent punishment, and lack of parental supervision have been implicated in the development of substance abuse.

Alcohol is the most common substance of abuse (Roth, 1994). It is legal and relatively cheap. The relationships of short- and long-term alcohol abuse to violent crime rates appear to be stronger than those for the other psychoactive substances. A significant proportion of assaults and homicides are committed by intoxicated persons (victims are also likely to be inebriated). The pharmacological effects of alcohol examined in the alcohol-violence relationship include behavioral disinhibition, decreased verbal fluency, and decrease abstract thinking and reasoning. These are hypothesized to contribute to violence by increasing interpersonal misunderstandings and conflict whereas decreasing the cognitive and verbal skills needed to resolve conflicts without resorting to violence (Miczek et al., 1994; Roth, 1994).

Blankfield (1991) found that violent crimes were more common in alcoholics compared to other criminals. Moreover, these alcoholic violent offenders had histories of aggressive traits predating their alcohol abuse. McCord (1981) noted that the backgrounds of criminal alcoholics are more similar to other criminals than to noncriminal alcoholics. Regier et al. (1990) reported substantial comorbidity of psychopathology in the Epidemiologic Catchment Area (ECA) Study. These findings are consistent with the notion of cumulative risk that guides this study.

Other Psychoactive Substances

Women arrested for drug offenses represent the fastest growing population in the prison system (Wellisch, Prendergast, & Anglin, 1994). Goldstein (1992) described a three part framework for the drug/violence nexus: psychopharmacological, economically compulsive, and systemic (Goldstein, 1992). The psychopharmacological effects are associated with increased risk for the stimulants, e.g., crack and speed, due to neurological irritability and impulsivity. Economic compulsion refers crimes committed by addicts who need money to buy drugs. The systemic effects refer to sales and distribution of illegal drugs. It is not only illegal to possess and sell drugs but the activities of drug markets are notoriously violent (Speckart & Anglin, 1986).

In summary, person-centered correlates of violence have been studied extensively. The developmental perspective coupled with control theory suggests that the intra-individual factors that are associated with the development of self-

control and with the formation of prosocial attachments will be powerful predictors of violence. However, it is clear that these individual characteristics interact with family factors and contextual factors in the development of violent behavior.

Family-Centered Risk Factors

Several family-centered risk factors have been established as major contributors to the development of a propensity for criminal violence (Laub & Sampson, 1988). These factors have been variously conceptualized and measured. This discussion will be organized in terms of (1) parental characteristics; (2) parental child-rearing practices, and (3) domestic violence including childhood physical and sexual abuse. Each of these influence family organization, nurturance, and discipline which in turn influence the ability of the family to effectively encourage the development of self-control and prosocial behavior.

Parental characteristics

Parents set the tone for family life and their effectiveness in creating and maintaining a safe, nurturing, and supportive environment for child rearing is largely determined by their own maturity and mental health. Parental characteristics associated with negative child outcomes include parental psychopathology (Frick, Kuper, Silverthorn, & Cotter, 1995; Klassen & O'Connor, 1994) criminality (Farrington et al., 1990; Loeber & Dishion, 1983; Lewis, Shanok, & Balla, 1979), and substance abuse (Convit, Jaeger, Lin, Meisner, & Volavka, 1988). These parental characteristics increase risk for dysfunctional family relationships (e.g., conflict and

hostility) that in turn increase the probability that their children will exhibit adverse outcomes in adulthood like violent behavior.

Parental child-rearing practices

Gottfredson and Hirschi (1990) persuasively argued that the socialization of the child within the family is the process that determines individual levels of self-control which, in turn, predict propensity for criminal and violent behavior. The discipline practices of parents that have been linked to violent offending include coercive disciplinary practices (Patterson, DeBaryshe, & Ramsey, 1989; Patterson & Capaldi, 1991), disorganized family management practices, severe physical punishment, inconsistent discipline, and lack of supervision (Hawkins, 1995; Laub & Lauritsen, 1993; Lewis et al., 1985; McCord, 1988; Straus, 1991). Severe physical punishment coupled with a rejecting parent compound the risk for adult violent offending (Rutter, 1987).

Straus (1991) emphasized the etiological role of childhood physical punishment in the propensity for the use of violence in adulthood. He claimed that physical punishment often progresses to physical abuse, forming the basis for an intergenerational transmission of violence (Straus, 1991; Widom, 1989). Further, parents who approve of physical punishment have much higher rates of physical abuse than parents who disapprove of physical punishment (99/1,000 versus 28/1,000). However, the processes linking childhood physical punishment and adult violent behavior have yet to be fully explicated (Giles-Sims, Straus, & Sugarman,

1995).

Domestic Violence

Witnessing and experiencing violence in the home has been associated with both juvenile and violent offending (Herrenkohl, Herrenkohl, & Toedter, 1983; Lewis et al., 1991; Klassen & O'Connor, 1994; Rivera & Widom, 1990). Girls and boys seem to be equally at risk for physical abuse (Knutson & De Vet, 1995). There is considerable evidence that aggressive parents produce aggressive children, especially in the context of a rejecting parent-child relationship (McCord, 1988) wherein the child learns that aggression is acceptable, even positive, as an observer of aggressive parental behavior.

The fact that most children who are exposed to violence in the home do not become violent leads to questions about the strength of the relationship between exposure to family violence and adult violent offending (Straus, 1980). Widom (1989) reported an extensive review of the literature looking at the intergenerational hypothesis linking child abuse to later violence. She concluded the empirical evidence of the intergenerational transmission of violence was weak.

The debate regarding the magnitude of effects of physical abuse in childhood on violent behavior in adulthood is ongoing (for this debate, see Egeland 1993; Widom, 1989; and Kaufman & Zigler, 1993). However, Klassen and O'Connor (1994) pointed out that from a risk assessment perspective, the evidence of increased incidence of child abuse and other forms of domestic violence in the history of violent

offenders is more than sufficient to consider both as substantial risk markers for violent offending. Moreover, several authors have concluded that there is a consistent and modest relationship between childhood maltreatment and violent offending (Malinosky-Rummell & Hansen, 1993; Rivera & Widom, 1990).

Estimates of the percentage of female inmates with a history of physical abuse range from 30% (Lake, 1993) to 53% (Pollock-Byrne, 1990; cited in Marcus-Mendoza, Sargent, & Ho, 1993). In an Oklahoma inmate sample of women (N=551), 74% reported a history of childhood physical abuse (Marcus-Mendoza et al., 1993). Therefore, the estimated incidence of physical abuse found in female inmate populations is much greater than that found by Knutson and DeVet (1995) in the general population.

Race and gender influence the relationship between childhood maltreatment and adult violent offending. Women with a history of physical abuse are less likely than their male counterparts to become violent offenders (Widom, 1991). In a similar fashion, white children appear less vulnerable than African-American children to the negative consequences of abuse (Kruttschnitt, 1994; Rivera & Widom, 1990; Widom, 1991). Thus, it seems that something about growing up white and female attenuates the adverse effects of childhood physical abuse on the development of criminally violent behavior.

Childhood Sexual Abuse

A history of childhood sexual abuse has been established as a risk factor for

adult criminal behavior (Widom & Ames, 1994). However, no studies were found at the time of this review that directly assessed the relationship between childhood sexual abuse and violent offending. Nevertheless, indirect evidence for such a relationship is suggested by the finding that there is an increased incidence of sexual abuse in the histories of women with borderline personality disorder who have a greater propensity for violent behavior (American Psychiatric Association, 1994; Coleman, 1994).

Additional indirect evidence is found in the increased incidence of childhood sexual abuse in high risk adult populations including female offenders (Reiss & Roth, 1993). National estimates for female offenders (35-63%) far exceed the 12% estimate for the general population (Lewis et. al., 1991; Pollock-Byrne, 1990; cited in Marcus-Mendoza et al., 1993). Lewis et al. (1991) found that 48% of their sample of 21 females had a history of sexual abuse by a family member. In a large sample (N=551) of Oklahoma female inmates, over half reported a history of sexual abuse before age 18 (Marcus-Mendoza et al., 1993).

The link between adult violent offending and childhood sexual abuse may be influenced by a variety of other factors that mediate the short- and long-term effects of sexual abuse (Reiss & Roth, 1993). Those factors reflect the specific characteristics of the abuse event, the child-perpetrator relationship, and the response to disclosure of the abuse (Beitchman et al., 1992; Briere & Elliott, 1994; Browne & Finkelhor, 1986; Kendall-Tackett, Williams, Finkelhor, 1993; Reiss & Roth, 1993). These may be

mediated by other family characteristics, e.g., parental supervision, marital conflict, and parental psychopathology.

Yama and his colleagues (1992) reported that the families of incest victims exhibit several problems including dysfunctional interactions, violence, and parental mental disorder. Since adverse outcomes linked to sexual abuse have been hypothesized to be associated with other factors, e.g., duration of the abusive experience over time, sexual abuse can be considered as a potential risk factor in a continuum of cumulative risk.

Because of the wide range of factors that affect the outcome of childhood sexual abuse, it might be considered to be an indirect risk factor for violent offending. Moreover, given the high degree of multiple risk present in female inmate populations, sexual abuse is expected to covary with mental disorder of the inmate, parental psychopathology, and potentially with other measures of the family environment. It is included in the present analysis as a risk factor for violence for what it can contribute to the effects of cumulative risk factors.

Contextual factors

Contextual risk factors for violence have been studied extensively. These include socioeconomical, environmental, and situational issues. There is essentially universal consensus that contextual variables play a critical role for understanding acts of violence (Dobash & Dobash, 1984; Monahan, 1981; Tedeschi & Felson, 1994; Wolfgang, 1958). Population studies have clearly demonstrated that community- and

cultural-level factors influence rates of violent crime (Reiss & Roth, 1993). The pathways by which social structures like race and class lead to individual acts of violence are yet to be fully explicated.

Klassen and O'Connor (1994) identified three categories of situational variables that are related to violent behavior: stressful circumstances, social support, and social structure. Gang membership and weapons possession have also been examined as situational risk factors that increase or decrease the probability of violence in high baseline individuals.

Three primary social risk factors for violence have been identified: (a) crowded neighborhoods of poor families with large income differences; (b) the social churning and subsequent disorganization associated with mobility and family disruptions; and (c) opportunities for violence associated with illegal markets in drugs and firearms (Reiss & Roth, 1993). Illegal drug markets thrive in impoverished, unstable neighborhoods. Control theory (Gottfredson & Hirschi, 1990) posits the relationship between person and situational factors in terms of individual differences in self-control; level of self-control predicts the kinds of situations that persons will create and perpetuate.

The statistical study of social factors produces interaction effects between known risk factors. For example, ethnicity and socioeconomic status interact: In conditions of poverty, whites are less likely than blacks to be homicide victims, but as socioeconomic status climbs the race differential falls (Reiss & Roth, 1993). It is

beyond the scope of this paper to review the powerful social forces that directly contribute to violent crime rates except to emphasize that poverty produces multiple stressors that facilitate the use of aggression and violence.

An additional situational variable is the victim-offender relationship. This variable clearly differentiates violent crimes by gender. Wolfgang's (1958) noted that women are more likely than men to kill a family member or intimate. When the victim is a husband or lover, there is usually a history of relationship violence; women are more likely than men to kill someone who has threatened them with physical harm (Campbell, 1995; Goetting, 1988; Silverman, Vega, & Danner, 1993; Wolfgang, 1958). Moreover, these female offenders appear to be quite different than other violent offenders. Browne (1987) reported that battered women who have murdered their spouse do not have the history of childhood problems that are common in other violent offender populations. Thus the victim-offender relationship is important. It shifts the emphasis from focusing on the person or the environment to the relationship. This allows consideration of multiple variables, how these play out, and targets for intervention, e.g., battered women's shelters, laws regulating serving alcohol to intoxicated persons.

Summary

Klassen and O'Connor (1994) recommended that differential patterns of risk factors be identified for subclasses of offenders. This results of this study may help to

establish gender specific risk/protection patterns for women that could improve risk management in various groups such as battered women or psychiatric populations. The purpose of this study was to explore how known risk and protective factors for violent behavior relate to women by examining differences between violent and nonviolent offenders along several dimensions available from a data base collected from female prisoners.

Chapter Three

Method

Participants

The sample for this study consisted of 167 women incarcerated at Mabel Bassett Corrections Center (MBCC) in Oklahoma City, Oklahoma during the time period from July, 1994 through December, 1995. MBCC is a medium and maximum security prison for female inmates. Additional data will be collected from criminal records maintained by the Oklahoma State Bureau of Investigation.

Instruments

The instruments used in this study included a demographic questionnaires, the Shipley Institute of Living Scales (SILS; Shipley, 1940; Zachary, 1986), the Childhood Questionnaire (CQ; Tartar, 1979), the Childhood Memories of Parenting (EMBU; Perris, Jacobsson, Lindstrom, von Knorring, & Perris, 1980), the Beck Depression Inventory, (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the State/Trait Anxiety Inventory (STAI: Form Y State Scale; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), the Sexual Abuse Scale (SAS; DiTomasso & Routh, 1993), the Substance Abuse Family Tree (SAFT; Mann, Sobell, Sobell, & Pavan, 1985), the Alcohol and Drug Use Questionnaires (developed by Nixon and colleagues at the Oklahoma Center for Drug and Alcohol Research), and the OSBI official criminal record.

Demographic Questionnaires

The demographic questionnaires were constructed to obtain identifying information including socioeconomic indicators, health (including history of pregnancy), and criminal history. Respondents either checked an appropriate response from a given list or filled in the blank. The following variables were drawn from the demographic questionnaires: age, age at time of incarceration, race, education, occupation at time of arrest, socioeconomic status, history of previous incarcerations, crime(s) for which they were currently serving time (referred to in this study as current crime), family history of incarcerations, employment at time of crime, presence of children, use of public assistance, and the relationship of substance use to the crime for which they were incarcerated (also referred to as current crime).

Socioeconomic status (SES) was calculated with the Hollingshead Four Factor Index of Social Status (1975). The index was mathematically derived from two variables: occupation and the number of years of completed education.

Shipley Institute of Living Scale (SILS; Zachary, 1986)

The Shipley Institute of Living Scale (SILS) has been used as a brief measure of intellectual functioning since 1939 (Shipley, 1940). The SILS has two subscales, vocabulary and abstraction. The vocabulary scale is comprised of 40 items, each of which is composed of a stimulus word that is followed by a group of four other words. The respondent is asked to circle one of the four other words that would be synonymous with the stimulus word. The abstraction scale is comprised of 20 items.

Each item begins with a stimulus of words, letters, or numbers that represent a logical sequence. In addition, the sequence includes a blank space, which the respondent is asked to fill in so that the logical sequence is complete.

The raw score for both subscales equals the total number of correct responses for each scale. For the present study, the two raw scores were added together for a total raw score, the Shipley Total Score, which was then used to derive an estimated WAIS-R Full Scale IQ score from Table D-1 of the Shipley manual. This estimated WAIS-R Full Scale IQ score was then used as the predictor variable measuring participants' cognitive ability.

Zachary, Crumpton, and Spiegel (1985) used linear regression and continuous norming, versus stratified norming, to develop a procedure for calculating age-adjusted WAIS-R IQ scores from the Shipley Total Scores. This procedure was used to develop Table D-1 of the Shipley Manual. The Shipley Total Score and the participant's age were found in Table D-1 and the associated estimated WAIS-R IQ was added to the data base to be used in the present analysis.

Split-half reliability Spearman-Brown correlation coefficients were .87 for Vocabulary; .89 for Abstraction; and .92 for the Shipley Total Score (the range was not reported). Test-retest reliability coefficients varied substantially across samples, ranging from a median of .60 for Vocabulary to .78 for Shipley Total Score. The median interval was 12 weeks (range = 2 to 16 weeks). Although variable, the results indicated generally high reliability coefficients (Zachary, 1986). The specific samples

used in calculating reliability scores were not described in the Shipley manual.

Validity studies have been carried out primarily to assess the validity of the Shipley for a brief estimate of current intellectual functioning. The manual describes evidence indicating sufficient content validity. The Shipley has also been used to estimate scores with the Wechsler Adult Intelligence Scale-Revised (WAIS-R) in a wide range of clinical samples. Shipley correlations with the WAIS-R Full Scale IQ ranged from .68 to .90. Additional validity studies correlated the Shipley with other measures of intelligence and academic achievement producing correlation coefficients ranging from .49 for the Slosson Intelligence Test to .78 for the Army General Classification Test. These provide additional evidence for the construct validity of the Shipley as a brief estimator of current intellectual functioning. Zachary (1986) concluded that the Shipley compares favorably with other measures of adult intelligence in terms of good temporal stability, internal consistency, content validity, and construct validity.

Substance Abuse Family Tree (SAFT)

The Substance Abuse Family Tree (SAFT) is a self-report instrument measuring substance use and abuse across four generations. This instrument is an adaptation of a family tree developed to study family correlates of substance abuse by Mann, Sobell, Sobell, and Pavan (1985).

The Substance Abuse Family Tree is a self-report instrument on which items refer to substance abuse by self and by family members, including grandparents,

parents, aunts and uncles, self, siblings, spouse(s) and children. It has two sections: a family tree and a "consequences" checklist. The family tree is drawn as a hierarchy of labelled boxes, starting at the top with both maternal and paternal grandparents and descending to the bottom boxes that represent the respondents' children. Each box corresponds to one relative. On the form is a code used to match the appropriate response to the relative. The numbered codes represent categories of substance use, ranging from 1 through 6: (1) alcoholic, (2) drug addict, (3) addicted to alcohol and drugs, (4) social user (defined as no problems experienced with substance use), (5) abstainer (never used), and (6) unknown. There is a space for indicating whether or not one or both parents were biological, adopted, or step-.

Below the family tree is a checklist of common problems experienced by individuals who abuse alcohol and drugs: job problems, marital problems, substance use related arrests, blackouts, abusive (verbally and/or physically) while intoxicated, cirrhosis, treatment, 12-step group attendance, social disapproval, passed out, and daily use. The number of consequences checked were summed. The total was used in the present analysis as an indicator of the severity of substance abuse.

The test-retest reliability of the original self-report questionnaire was reported for both alcoholics and non-alcoholics such that the instrument reliably classified relatives as alcoholics or problem drinkers over a 2-week interval (Mann et al., 1985). The kappa values ranged from .78 to .94. The lowest value was obtained when respondents reported the drinking behavior of second degree relatives. The authors

concluded that the test-retest reliability of the SAFT appeared satisfactory for both clinical and research purposes (Mann et al., 1985).

Alcohol and Drug Use Questionnaire (ADUQ)

Additional substance abuse information was drawn from the Alcohol and Drug Use Questionnaire (ADUQ): age when first used alcohol, age when first became drunk, Quantity/Frequency Index (calculated from amount of alcohol consumed combined with the frequency of use), whether or not the respondent considered herself a problem drinker and/or drug addict, and intravenous injection of drugs. This instrument was developed at the Center for Alcohol and Drug Studies in Oklahoma City, Oklahoma, where it has been used to provide substance abuse data on a variety of samples.

Childhood Questionnaire (CQ)

The Childhood Questionnaire (CQ) was originally developed by Tartar and colleagues (1979) to measure the history of childhood difficulties in adult populations. He started with a symptom checklist that had been used to diagnose hyperkinetic and/or minimal brain dysfunction syndrome which is now known as attention deficit disorder/with or without hyperkinesis. The CQ is comprised of 50 true/false items that reflect a wide range of childhood problems. True items are given a value of 1 and false items a value of 0. The total score is a simple addition of all items. The CQ has three scales: Learning Disorder, Conduct Disorder, and Attention Deficit Hyperactivity Disorder. This instrument was introduced into the protocol after data

collection had begun. It is available for only 66 cases (approximately 40% of the sample). Consequently, because of the requirements of the present statistical analysis, this data will only be used in a limited set of analyses (more below).

De Obaldia and Parsons (1984) studied the reliability and validity of the CQ in a sample of hospitalized male alcoholics. They concluded that the instrument was useful for studying the existence of premorbid behavior disorders in alcoholics. High test-retest reliability of the Hk/MBD ($r = +.93$, $p < .05$) was found for the number of Hk/MBD symptoms checked on both test administrations (test period mean = 47 ± 2 days). Item analysis revealed that 73.5% of the specific symptoms reported in the first checklist administration were reported again at the second administration. Further evidence of reliability was provided by the stability of Hk/MBD scores exhibited during multiple administrations. As expected, during hospitalization both Beck Depression Inventory scores and State-Trait Anxiety Inventory Scores (State-scale) went down approximately 50% during the time between the first and second administration whereas the total number of Hk/MBD endorsements did not change (De Obaldia & Parsons, 1984).

Validity was assessed by administering the same instrument to parents and siblings who were asked to rate the subject. There were significant correlations and levels of agreement on specific items between subjects' claimed symptoms and their families' retrospective reports (De Obaldia & Parsons, 1984).

Childhood Memories of Parenting (Egna Minnen Beträffande Uppfostram: EMBU)

The Childhood Memories of Parenting (EMBU stands for the Swedish name Egna Minnen Beträffande Uppfostram) was developed in Sweden by Perris, Jacobsson, Lindstrom, von Knorring and Perris (1980) to measure memories of each of one's parents' childrearing behaviors. The items were developed to reflect a multidimensional model of parental rearing behavior that generated 14 a priori facets: abusive, depriving, punitive, shaming, rejecting, overprotective, over-involved, tolerant, affectionate, performance oriented, guilt engendering, stimulating, favoring siblings, and favoring subject. Moreover, there were two items included to assess the degree of consistency in parental rearing behavior and the degree of strictness of parental rearing style (Gerlsma, Emmelkamp,& Arrindell, 1990).

The version of the EMBU used in this study was the 72-item form. Items include a stimulus statement coupled with a 4 point Likert type response scale, measuring the degree to which the stimulus statement was true for the respondent. For example, one stimulus item is "It happened that I wished my parents would worry less about what I was doing." The respondent is instructed to circle one of four alternatives: (1) "No, never"; (2) "Yes, but seldom"; (3) "Yes, often"; and (4) "Yes, most of the time." The circled numbers represent numerical values that were then summed for a total score.

The instrument has been used to assess memories of parental rearing behaviors in a wide variety of clinical populations. Initial factor analyses revealed four factors:

rejection, emotional warmth, overprotection and favoring subject (Arindell, Emmelkamp, Brilman, & Monsma (1983). Additional investigation provided clear support for replicability and invariance characteristics for the four factors (Gerlsma et al., 1990). The specific values were not reported by these authors.

For the present study, in addition to measuring memories of parenting, the EMBU was used to identify participants' history of childhood physical abuse. The history was considered positive if the respondent circled one of the affirmative responses to either item #56 "It happened that my parents beat me for no reason" or item #59 "I usually got beaten by my parents". This variable was constructed as a dichotomous variable representing the presence or absence of physical abuse by a parent.

Although this assessment of childhood physical abuse lacks supportive psychometric evidence, it is included for two reasons. First, childhood physical abuse is a strong predictor for subsequent juvenile and adult violent behavior, as indicated in the literature review, and it would be useful to include it in a risk analysis of violence. Including this measure could allow detection of a subgroup of female offenders for whom physical abuse was an etiological influence in the development of criminal behavior. As this is an untested measure of childhood physical abuse, the results will be interpreted with the requisite caveats. The variable will be treated as dichotomous because the positive endorsement of either item #56 or item #59 clearly suggests the history of, but not the extent of, physical abuse.

Sexual Abuse Scale (SAS)

The Sexual Abuse Scale (SAS) was developed by DiTomaso and Routh (1993) as part of a study of the relationship between dissociation and abuse to assess the presence and extent of recalled sexual abuse. It includes 11 items. Two items reflect "normal" childhood sexual experiences whereas the remaining nine items represent sexual experiences considered abusive.

Each SAS item has three parts. The first part (a.) asks the respondent if they recall a specific sexual experience occurring in their childhood. The response is either yes or no. If the answer is no, the respondent is directed to proceed to the next item. If the answer is yes, the respondent is instructed to qualify the sexual experience by circling graded prompts that address (b.) degree of distress, and (c.), degree of force.

Coons (1994) argued that the wording of the items is conceptually narrow, too subjective, and ambiguous. DiTomaso and Routh (1994) responded to Coons' criticism by reporting the preliminary psychometric evidence of reliability and validity as well as pointing out the limited purpose of the scale, i.e., measuring the presence and extent of sexual abuse in an undergraduate population.

DiTomaso and Routh (1993) reported that the scale had good internal consistency (Cronbach's $\alpha = .93$) and was significantly correlated with measures of (a) recall of physical abuse, (b) absorption (a cognitive construct assessing attention and its relationship to dissociation), and (c) dissociative experiences. Thus preliminary psychometric evidence was provided for its reliability and construct and

convergent validity, especially in undergraduate samples (DiTomasso & Routh, 1994).

The use of this instrument in prison populations has not been assessed, consequently results need to be interpreted with caution. DiTomasso and Routh (1993) did not report the reading level of the instrument. Respondents with lower reading levels may not have understood the items in the same way as their undergraduate sample. However, the small group interview format employed in data collection at the prison allowed for significant dialogue between the examiner and the participants who were frequently encouraged to ask questions.

Di Tomasso and Routh (1993) argued that scores of one or more indicate abuse, obviating the need for a cut-off score. However, a score greater than zero could capture experiences that were "somewhat" distressing. Though the individual may have been upset by the exploitation of an older person, this does not necessarily constitute the quality of abuse that is likely to have long term negative effects.

Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI) was included in the original protocol to assess current symptoms of depression. The instrument has been widely used in clinical and normal populations since it was introduced in 1961 by Beck and his colleagues. Beck et al. (1988) reported the results of a meta-analysis of studies assessing the psychometric properties of the BDI. Their study revealed a mean coefficient alpha of 0.86 for psychiatric patients and 0.81 for non-psychiatric patients. The concurrent validity scores of the BDI were also high. The mean correlations of

the BDI with clinical ratings was .72 and the Hamilton Psychiatric Rating Scale for Depression (HRSD) was .73 for psychiatric patients. For nonpsychiatric subjects, the mean correlations of the BDI with clinical ratings was .60 and with the HRSD was .74. The authors also reported that the BDI discriminates subtypes of depression and differentiates depression from anxiety.

State-Trait Anxiety Inventory, Form Y-1 (STAI)

This measure of state anxiety was included in the prison instrument protocol to provide an assessment of current symptoms of anxiety. The STAI has been used in a large number of psychological studies for a wide variety of purposes. Speilberger et al. (1983) reported that the Form Y-1 (State Anxiety) demonstrated desirably low (for a measure of state versus trait anxiety) test-retest reliabilities in samples of high school and college students, with r - values ranging from .16 to .36. The internal consistency is a more meaningful measure of reliability for state anxiety because of its transitory nature. The Cronbach alpha for the State Anxiety form was uniformly high, ranging from .86 to .95, in a variety of populations. Results of studies of the concurrent, convergent, divergent, and construct validity of the STAI are reported in the manual. Speilberger (1983) found evidence of the instruments validity for a wide range of purposes in several samples.

Criminal History

Official criminal records obtained from the Oklahoma State Bureau of Investigation (OSBI) were obtained in July of 1997. These records are available to the

public for a fee. However, Oklahoma state law mandates that they may be distributed for only the cost of copying for research purposes. OSBI personnel were provided with the identifying information (name, Department of Corrections identification number, and birth date) of the participants. They then obtained and copied each record.

These records were reviewed to gather data on the criterion variable, i.e., the presence or absence of an official record of a violent crime conviction. Violent crimes included homicide (murder and manslaughter) attempted homicide, all assaults, all robberies, rape, other sexual assaults, and child abuse. Conviction for violent crimes were found for 83 (49.7%) of the 167 cases.

Procedure

Participants were recruited at MBCC through sign-up sheets, direct recruitment on the prison grounds, and through group presentations about the project. The instruments were administered in small groups ranging from 3 to 12 participants. The nature of the study was explained by the examiner and informed consent was obtained. Participation was voluntary. The examiner was present throughout the administration period to answer questions. Corrections policy prohibits inmates from receiving material compensation for participating in research projects, however, refreshments were served after the instruments had been completed.

In July, 1997, following the data collection at the prison, the outcome variable

was derived from the official criminal records of the prisoners located at the Oklahoma State Bureau of Investigation (OSBI) (more above). These records were then compared to identifying information from the demographic questionnaire to assure that the record matched the individual who provided the prison data. The dichotomous criterion variable, conviction of violent crime, was obtained by reading through the criminal record and noting the presence or absence of a conviction for violent crime.

References

- Abram, K. (1989). The effect of co-occurring disorders on criminal careers: Interaction of antisocial personality, alcoholism, and drug disorders. International Journal of Law and Psychiatry, 12, 133-148.
- Achenbach, T., Howell, C., McConaughy, S., & Stanger, C. (1995a). Six-year predictors of problems in a national sample of children and youth: II. Signs of disturbance. Journal of the American Academy of Child and Adolescent Psychiatry, 34(4), 488-498.
- Achenbach, T., Howell, C., McConaughy, S., & Stanger, C. (1995b). Six-year predictors of problems in a national sample of children and youth: III. Transitions to young adult syndromes. Journal of the American Academy of Child and Adolescent Psychiatry, 34(5), 658-669.
- Agnew, R. (1983). Physical punishment and delinquency: A research note. Youth & Society, 15(2), 225-236.
- Agnew, R. (1995). Testing the leading crime theories: An alternative strategy focusing on motivational processes. Journal of Research in Crime and Delinquency, 32(4), 363-398.
- American Psychiatric Association (1994). Diagnostic and statistical manual of mental disorders, 4th edition (DSM IV). Washington, D.C.: American Psychiatric Association Press.
- Argyle, M. (1991). Cooperation: The basis of sociability. New York:

Rutledge.

Arneklev, B., Grasmick, H., Tittle, C., & Bursik, R. (1993). Low self-control and imprudent behavior. Journal of Quantitative Criminology, 9(3), 225-247.

Arrindell, W., Emmelkamp, E., Brilman, E., & Monsma, A. (1983). Psychometric evaluation of an inventory for assessment of parental rearing practices. Acta Psychiatrica Scandinavica, 67, 163-177.

Arrindell, W., Methorst, G., Kwee, M. Van de Ende, J., Pol, E., & Moritz, B. (1989). Expanding the validity of a measure of reported parental rearing practices with psychiatric inpatients: Further Dutch experiences with the EMBU. Personality and Individual Differences, 10(5), 493-500.

Bandura, A. (1973). Aggression: A social learning analysis. Englewood Cliffs, NJ: Prentice Hall.

Barratt, E. (1994). Impulsiveness and aggression. In J. Monahan and H. Steadman (Eds.) Violence and mental disorder. Chicago: University of Chicago Press.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of general Psychiatry, 4, 561-571.

Beck, A., Steer, R., & Garbin, M. (1988). Psychometric properties of the Beck Depression Inventory: Twenty years of evaluation. Clinical Psychology Review, 8, 77-100.

Beitchman, J., Zucker, K., Hood, J., DaCosta, G., Akman, D., & Cassavia, E.

(1992). A review of the long-term effects of child sexual abuse. Child Abuse & Neglect, 16, 101-118.

Bennett, E. M., & Kemper, K. J. (1994). Is abuse during childhood a risk factor for developing substance abuse problems as an adult? Journal of Developmental and Behavioral Pediatrics, 15(6), 426-429.

Bernard, T. J. (1990). Angry aggression among the truly disadvantaged. Criminology, 28(1), 73-96.

Blankfield, A. (1991). Women, alcohol dependence, and crime. Drug and Alcohol Dependence, 27, 185-190.

Blumstein, A. (1995). A LEN interview with Professor Alfred Blumstein of Carnegie Mellon University. Law Enforcement News, 21(422), 10-13.

Borum, R. (1996). Improving the clinical practice of violence risk assessment: Technology, guidelines, and training. American Psychologist, 51(9), 945-956.

Brage, D., Garabaldi, M., Intaglietta, J., Buenaventura, I., & Famulari, A. (1972). Alcohol and nervous system with special reference to the exotic neuropathies. International Journal of Neurology, 9, 173-185.

Briere, J. N., & Elliot, D. M. (1994). Immediate and long-term impacts of child sexual abuse. The Future of Children, 4(2), 54-69.

Browne, A. (1987). When Battered Women Kill. New York: The Free Press.

Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. Psychological Bulletin, 99, 66-77.

Brownstone, D. Y., & Swaminath, R. S. (1989). Violent behavior and psychiatric diagnosis in female offenders. Canadian Journal of Psychiatry, 34, 190-194.

Buss, A. H. (1961). The psychology of aggression. New York: Wiley.

Byrnes, J. P. (1995). Domain specificity and the logic of using general ability as an independent variable or covariate. Merrill-Palmer Quarterly, 41(1), 1-24.

Campbell, A. (1995). Representations, repertoires, and power: Mother-child conflict. Journal for the Theory of Social Behaviour, 25(1), 35-37.

Campbell, J. C. (1992). The Danger Assessment Instrument: Risk factors of homicide of and by battered women. Questions and answers in lethal and non-lethal violence. Proceedings of the First Annual Workshop of the Homicide Research Working Group of the National Institute of Justice, (p. 27-38), June 14-16, 1992, Ann Arbor, MI. Washington, D. C.: National Institute of Justice.

Campbell, J. C. (1995). Prediction of homicide of and by battered women. In J. C. Campbell (Ed.) Assessing dangerousness: Violence by sexual offenders, batterers, and child abusers. Thousand Oaks, CA: Sage Publications.

Capaldi, D. M., & Patterson, G. R. (1996). Can violent offenders be distinguished from frequent offenders: Prediction from childhood to adolescence. Journal of Research in Crime and Delinquency, 33(2), 206-231.

Castro, J., Toro, J., Van der Ende, J., & Arrindell, W. A. (1993). Exploring the feasibility of assessing perceived parental rearing styles in Spanish children with the

EMBU. The International Journal of Social Psychiatry, 39(1), 47-57.

Chess, S., & Thomas, A. (1990). Continuities and discontinuities in temperament. In L. Robins and M. Rutter (Eds.) Straight and devious pathways from childhood to adulthood. New York: Cambridge University Press.

Cicchetti, D., & Lynch, M. (1993). Toward an ecological/transactional model of community violence and child maltreatment. Consequences for children's development. Psychiatry, 53, 96-118.

Cicchetti, D., Rogosch, F. A., Lynch, M., & Holt, K. D. (1993). Resilience in maltreated children: Processes leading to adaptive outcome. Development and Psychopathology, 5, 629-647.

Climent, C. E. & Ervin, F. R. (1972). Historical data in the evaluation of violent subjects. Archives of General Psychiatry, 27, 621-624.

Climent, C. E., Rollins, A., Ervin, F. R., & Plutchik, R. (1973). Epidemiological studies of women prisoners. I: Medical and psychiatric variables related to violent behaviour. American Journal of Psychiatry, 130, 985-990.

Climent, C. E., Plutchik, R., Ervin, F. R., & Rollins, A. (1977). Parental loss, depression and violence. III. Epidemiological studies of female prisoners. Acta Psychiatrica Scandinavica, 55, 261-268.

Cloninger, C. R. & Guze, S. B. (1970). Female criminals: Their personal, familial, and social backgrounds. Archives of General Psychiatry, 23, 554-558.

Cohen, L. E., & Machalek, R. (1988). A general theory of expropriative crime:

An evolutionary ecological approach. American Journal of Sociology, 94(3), 465-501.

Cohen, P. Brook, J. S., Cohen, J., Velez, C. N., & Garcia, M. (1990).

Common and uncommon pathways to adolescent psychopathology and problem behavior. In L. Robins and M. Rutter (Eds.) Straight and devious pathways from childhood to adulthood. New York: Cambridge University Press.

Coie, J. D., Watt, N. F., West, S. G., Hawkins, J. D., Asarnow, J. R., Markman, H. J., Ramey, S. L., Shure, M. B., & Long, B. (1993). The science of prevention: A conceptual framework and some directions for a national research program. American Psychologist, 48(10), 1013-1022.

Cole, K., Fisher, G., & Cole, S. (1968). Women who kill: A sociopsychological study. Archives of General Psychiatry, 19, 1-8.

Coleman, V. E. (1994). Lesbian battering: The relationship between personality and the perpetration of violence. Violence and Victims, 9(2), 139-152.

Collins, J. J., Schlenger, W. E., & Jordan, B. K. (1988). Antisocial personality and substance abuse disorders. Bulletin of the American Academy of Psychiatry Law, 16, 187-198.

Convit, A., Jaeger, J., Lin, S., Meisner, M., & Volavka, J. (1988). Predicting assaultiveness in psychiatric inpatients: A pilot study. Hospital and Community Psychiatry, 39, 429-434.

Coons, P.M. (1994). [Letter to the editor]. Child Abuse and Neglect, 18(10), 885.

- Currie, E. (1998). **Crime and punishment in America**. New York: Holt/Metropolitan.
- Daly, M., & Wilson, M. (1988). **Homicide**. New York: Aldine de Gruyter.
- Daniel, A. E., & Harris, P. W. (1982). Female homicide offenders referred for pretrial psychiatric examination. Bulletin of the American Academy of Psychiatry and the Law, 10, 261-269.
- Daniel, A. E., & Kashani, J. H. (1983). Women who commit crimes of violence. Psychiatric Annals, 13 (9), 697-713.
- Dawson, J., & Langan, P. (1994). **Murder in families**. Special Report. Washington, D. C.: Bureau of Justice Statistics.
- De Pauw, K., & Szulecka, K. (1988). Dangerous delusions: Violence and the misidentification of syndromes. British Journal of Psychiatry, 152, 91-96.
- DeWit, D.J., Silverman, G., Goodstadt, M., & Stoduto, G. (1995). The construction of risk and protective indices for adolescent alcohol and other drug use. The Journal of Drug Issues, 25(4), 837-863.
- Diaz, R. M., & Fruhauf, A. G. (1991). The origins and development of self-regulation: A developmental model on the risk for addictive behaviors. In N. Heather, W. R. Miller, and J. Greeley (Eds.) Self-control and the addictive behaviors. New York: Maxwell MacMillan Publishing.
- Dillingham, S. (1991). **Violent crime in the United States**. Washington, D.C.: Bureau of Justice Statistics.

DiTomasso, M. J., & Routh, D. K. (1993). Recall of abuse in childhood and three measures of dissociation. Child Abuse and Neglect, 17, 477-485.

DiTomasso, M. J., & Routh, D. K. (1994). [Letter to the editor]. Child Abuse and Neglect, 18 (10), 886-887.

Dixon, J. (1995). The nexus of sex, spousal violence, and the state. Law and Society Review, 29(2), 359-375.

Dobash, R. E., & Dobash, R. P. (1984). The nature and antecedents of violent events. British Journal of Criminology, 24(3), 269-288.

Dollard, J., Doob, N., Miller, N. E., Mowrer, O. H., & Sears, R. R. (1939). Frustration and aggression. New Haven, CT: Yale University Press.

Eagly, A. H. & Steffen, V. J. (1986). Gender and aggressive behavior: A meta-analytic review of the social psychological literature. Psychological Bulletin, 100(3), 309-330.

Egeland, B. (1993). A history of abuse is a major risk factor for abusing the next generation. In R. J. Gelles and D. R. Loseke (Eds.), Current controversies on family violence. Newbury Park, CA: Sage Publications.

Eron, L. D. (1987). The development of aggressive behavior from the perspective of a developing behaviorism. American Psychologist, 42, 435-442.

Eronen, M. (1995). Mental disorders and homicidal behavior in female subjects. American Journal of Psychiatry, 152(8), 1216-1218.

Eyestone, L. L., & Howell, R. J. (1994). An epidemiological study of attention-

deficit hyperactivity disorder and major depression in a male prison population.

Bulletin of the American Academy of Psychiatry and the Law, 22(2), 181-193.

Fagan, J., & Browne, A. (1993). Violence between spouses and intimates: Physical aggression between women and men in intimate relationships. In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Fagan, J., & Wexler, S. (1987). Crime at home and in the streets: The relationship between family and stranger violence. Violence and Victims, 2(1), 5-21.

Farrington, D. P., Loeber, R., & Van Kammen, W. B. (1990). Long-term criminal outcomes of hyperactivity-impulsivity-attention deficit and conduct problems in childhood. In L. Robins and M. Rutter (Eds.) Straight and devious pathways from childhood to adulthood. New York: Cambridge University Press.

Farrington, D. P. (1991). Childhood aggression and adult violence: Early precursors and later-life outcomes. In D. J. Pepler and K. H. Rubin (Eds.), The development and treatment of childhood aggression, pp. 5-29. Hillsdale, N. J.: Erlbaum.

Feehan, M., McGee, R., Williams, S. M., & Nada-Raja, S. (1995). Models of adolescent psychopathology: Childhood risk and the transition to adulthood. Journal of the American Academy of Child and Adolescent Psychiatry, 34(5), 670-679.

Felthous, A. R., & Yudowitz, B. (1977). Approaching a comparative typology of assaultive female offenders. Psychiatry, 40, 270-276.

Frick, P. J., Kuper, K., Silverthorn, P., & Cotter, M. (1995). Antisocial behavior, somatization, and sensation-seeking behavior in mothers of clinic-referred children. Journal of the American Academy of Child and Adolescent Psychiatry, 34(6), 805-812.

Gelles, R. J. (1993). Through a sociological lens: Social structure and family violence. In R. J. Gelles and D. R. Loseke (Eds.), Current controversies on family violence. Newbury Park, CA: Sage Publications.

General Accounting Office. (1979). Female offenders: Who are they and what are the problems confronting them? (GGD-79-73) Washington, D. C.: United States General Accounting Office.

Gerlsma, C., Emmelkamp, P. M. G., Arrindell, W. A. (1990). Anxiety, depression, and perception of early parenting: A meta-analysis. Clinical Psychology Review, 10, 251-277.

Giles-Sims, J., Straus, M. A., & Sugarman, D. B. (1995). Child, maternal, and family characteristics associated with spanking. Family Relations, 44, 170-176.

Goetting, A. (1987). Homicidal wives. Journal of Family Issues, 8(3), 332-341.

Goetting, A. (1988). Patterns of homicide among women. Journal of Interpersonal Violence, 3(1), 3-20.

Goldstein, P. J. (1992). Drugs and violence. Questions and answers in lethal and non-lethal violence. Proceedings of the First Annual Workshop of the Homicide Research Working Group, National Institute of Justice (pp. 11-26). Ann Arbor MI,

June 14-16, 1992. Washington, D.C.: National Institute of Justice.

Good, M. I. (1978). Primary affective disorder, aggression, and criminality: A review and clinical study. Archives of General Psychiatry, 35, 954-960.

Gottfredson, M., & Hirschi, T. (1990). A general theory of crime. Stanford, CA: Stanford University Press.

Grasmick, H. G., Tittle, C. R., Bursik, R. J., & Arneklev, B. J. (1993). Testing the core empirical implications of Gottfredson and Hirschi's general theory of crime. Journal of Research in Crime and Delinquency, 30(1), 5-29.

Haizlip, T., Corder, B. F., & Ball, B. C. (1984). The adolescent murderer. In C. R. Keith (Ed.) The aggressive adolescent: Clinical perspectives. New York: The Free Press.

Hatzichristou, C., & Papadatos, Y. (1993). Juvenile delinquents perceptions of childhood parental rearing patterns. Child Abuse and Neglect, 17, 487-494.

Hawkins, J. D. (1995). Controlling crime before it happens: Risk-focused prevention. National Institute of Justice Journal, August, No. 229, 10-18.

Heilbrun, A. B. (1990). The measurement of criminal dangerousness as a personality construct: Further validation of a research index. Journal of Personality Assessment, 54, 141-148.

Herrenkohl, E. C., Herrenkohl, R. C., & Toedter, L. J. (1983). Perspectives on the intergenerational transmission of abuse. In D. Finkelhor, R. J. Gelles, G. T. Hotaling, & M. A. Straus (Eds.), The dark side of families: Current family violence

research (pp. 305-316). Beverly Hills, CA: Sage Publications.

Herrnstein, R. J., & Murray, C. (1994). The Bell Curve. New York: Free Press.

Hindelang, M. J. (1974). The Uniform Crime Reports revisited. Journal of Criminal Justice, 2, 1-17.

Hirschi, T., & Hindelang, M. J. (1977). Intelligence and delinquency: A revisionist review. American Sociological Review, 42, 571-587.

Hodgins, S. (1992). Mental disorder, intellectual deficiency, and crime: Evidence from a birth cohort. Archives of General Psychiatry, 49, 476-483.

Hoffman-Bustamante, D. (1973). The nature of female criminality. Issues in Criminology, 8, 117-136.

Hollingshead, A. B. (1975). Four factor index of social status. Unpublished working paper.

Hosmer, D., & Lemeshow, S. (1989). Applied logistic regression. New York: John Wiley & Sons.

Hough, E., & Wolf, P. (1981). Violent crime in a birth cohort: Copenhagen 1953-1977: Project Metropolitan: Denmark. Presented at the Symposium on Life History Research in Aggression and Antisocial Behavior, Monterey CA.

Huesman, L. R., Eron, L. D., & Yarmel, P. W. (1987). Intellectual functioning and aggression. Journal of Personality and Social Psychology, 52, 232-240.

Hyde, J. S. (1984). How large are gender differences in aggression? A developmental meta-analysis. Developmental Psychology, 20, 51-66.

Hyde, J. S. (1986). Gender differences in aggression. In J. S. Hyde and M. C. Linn (Eds.), The psychology of gender differences (pp. 61-56). Baltimore: Johns Hopkins University Press.

Kandel, E., & Mednick, S. (1991). Perinatal complications predict violent offending. Criminology, 29, 519-530.

Kandel, E., Mednick, S. A., Kirkegaard-Sorenson, L., Hutchings, B., Knop, J., Rosenberg, R., & Schulsinger, F. (1988). IQ as a protective factor for subjects at high risk for antisocial behavior. Journal of Consulting and Clinical Psychology, 56, 224-226.

Kaufman, J., & Zigler, E. (1993). The intergenerational transmission of abuse is overstated. In R. J. Gelles and D. R. Loseke (Eds.), Current controversies on family violence. Newbury Park, CA: Sage Publications.

Kellam, S. G., Rebok, G. W., Ialongo, N., & Mayer, L. S. (1994). The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiologically-based preventive trial. Journal of Child Psychology and Psychiatry, 35(2), 259-281.

Kendall-Tackett, K. A., Williams, L. M., & Finklehor, D. (1993). Impact of sexual abuse on children: A review and synthesis of recent empirical studies. Psychological Bulletin, 113(1), 164-180.

Kindlon, D. J., Tremblay, R. E., Mezzacappa, E., Earls, F., Laurent, D., & Schaal, B. (1995). Longitudinal patterns of heart rate and fighting behavior in 9-through 12-year-old boys. Journal of the American Academy of Child and Adolescent Psychiatry, 34(3), 373-377.

Klassen, D., & O'Connor, W. A. (1994). Demographic and case history variables in risk assessment. In Monahan, J. and Steadman, H. J. (Eds.) Violence and mental disorder: Developments in risk assessment. Chicago: The University of Chicago Press.

Kopp, C. (1989). Regulation of distress and negative emotions: A developmental view. Developmental Psychology, 25(3), 343-354.

Kruttschnitt, C. (1993). Violence by and against women: A comparative and cross-national analysis. Violence and Victims, 8(3), 253-270.

Kruttschnitt, C. (1994). Gender and interpersonal violence. In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Lake, E. S. (1993). Exploration of the violent victim experiences of female offenders. Violence and Victims, 8(1), 41-52.

Langevin, R., Ben-Aron, M., Wortzman, G., Dickey, R., & Handy, L. (1987). Brain damage, diagnosis, and substance abuse among violent offenders. Behavioral Sciences and the Law, 5(1), 77-94.

Lattimore, P. K., Visher, C. A., & Linster, R. L. (1995). Predicting rearrest for

violence among serious youthful offenders. Journal of Research in Crime and Delinquency, 32(1), 54-83.

Laub, J., & Sampson, R. (1988). Unraveling families and delinquency: A reanalysis of the Glueck's data. Criminology, 26, 355-380.

Laub, J. H., & Lauritsen, J. L. (1993). Violent criminal behavior over the life course: A review of the longitudinal and comparative research. Violence and Victims, 8(3), 235-252.

Le Blanc, M. (1990). Two processes of the development of persistent offending: Activation and escalation. In L. Robins and M. Rutter (Eds.) Straight and devious pathways from childhood to adulthood. New York: Cambridge University Press.

Lewis, D. O., Yeager, C. A., Cobham-Portorreal, C. S., Klein, N., Showalter, C., & Anthony, A. (1991). A follow-up of female delinquents: Maternal contributions to the perpetuation of deviance. Journal of the American Academy of Child and Adolescent Psychiatry, 30(2), 197-201.

Lewis, D., Shanok, S., Pincus, J. H., Grant, M., & Ritvo, E. (1979). Violent juvenile delinquents: Psychiatric, neurological, psychological and abuse factors. Journal of the American Academy of Child Psychiatry, 18, 307-319.

Lewis, D., Shanok, S. S., & Balla, D. A. (1979). Parental criminality and medical histories of delinquent children. American Journal of Psychiatry, 136(3), 288-292.

Lewis, D. O., Moy, E., Jackson, L. D., Aaronson, R. Restifo, N., Serra, S., Simos, A. (1985). Biopsychosocial characteristics of children who later murder: A prospective study. American Journal of Psychiatry, 142(10), 1161-1167.

Lilly, J. R., Cullen, F. T., & Ball, R. A. (1995). Criminological theory: Context and consequences, 2nd edition. Thousand Oaks, CA: Sage Publications.

Link, B. G., & Stueve, A. (1995). Evidence bearing on mental illness as a possible cause of violent behavior. Epidemiologic Reviews, 17(1), 172-181.

Link, B. G., Andrews, H. A., & Cullen, F. T. (1992). The violent and illegal behavior of mental patients reconsidered. American Sociological Review, 57, 275-292.

Loeber, R. (1982). The stability of antisocial and delinquent behavior: A review. Child Development, 53, 1431-1446.

Loeber, R., & Dishion, T. (1983). Early predictors of male delinquency: A review. Psychological Bulletin, 94(1), 68-99.

Loeber, R., & Stouthamer-Loeber, M. (1986). Family factors as correlates and predictors of juvenile conduct problems and delinquency. Pp. 219-339 in M. Tonry and N. Morris, (Eds.), Crime and Justice, Volume 7. Chicago: University of Chicago Press.

Loeber, R., Green, S. M., Keenan, K., & Lahey, B. B. (1995). Which boys will fare worse? Early predictors of the onset of Conduct Disorder in a six-year longitudinal study. Journal of the American Academy of Child and Adolescent Psychiatry, 34(4), 499-509.

Lombroso, C. (1993). *Crime: Its causes and remedies*. In F. P. Williams and M. D. McShane (Eds.), Criminology Theory: Selected Classic Readings. Chapter 2, pp. 21-31. Cincinnati, OH: Anderson Publishing Company. Source: Cesare Lombroso, *Crime: Its causes and remedies*. Boston: Little, Brown, and Company, 1918.

Lynam, D., Moffitt, T., & Stouthamer-Loeber, M. (1993). Explaining the relation between IQ and delinquency: Class, race, test motivation, school failure, or self-control? Journal of Abnormal Psychology, 102(2), 187-196.

Malinosky-Rummell, R., & Hansen, D. J. (1993). Long-term consequences of childhood physical abuse. Psychological Bulletin, 114(1), 68-79.

Mann, R. E., Sobell, L. C., Sobell, M. B. & Pavan, D. (1985). Family Tree Questionnaire for Assessing Family History of Drinking Problems. In D. J. Lettieri, M. A. Sayers, and J. E. Nelson (Eds.) NIAAA Treatment Handbook Series, Vol.2. Alcoholism treatment assessment research instruments. National Institute of Alcohol Abuse and Alcoholism. Washington, D. C. DHHS Pub. No. 85-1380, pp. 162-166.

Marcus-Mendoza, S., Sargent, E., & Ho, Y. C. (1993). Profile of abused women offenders. A grant report submitted to the State of Oklahoma, Department of Corrections.

Masten, A. S. (1989). Resilience in development: Implication of the study of successful adaptation for developmental psychopathology. In D. Cicchetti (Ed.), Rochester symposium on developmental psychopathology: Vol. 1. The emergence of

a discipline (pp. 261-294). Hillsdale, NJ: Erlbaum.

McCord, J. (1979). Some child rearing antecedents of criminal behaviour in adult men. Journal of Personality and Social Psychology, 37, 1477-1486.

McCord, J. (1981). Alcoholism and criminality. Journal of Studies on Alcohol, 42(9), 739-748.

McCord, J. (1983). A forty year perspective on effects of child abuse and neglect. Child Abuse and Neglect, 7, 265-270.

McCord, J. (1988). Parental aggressiveness and physical punishment in a long-term perspective. In G. Hotaling, D. Finklehor, J. Kirkpatrick, and M.A. Straus (Eds.), Family Abuse and its Consequences, 91-98. Newbury Park: Sage Publications.

Miczek, K. A., DeBold, J. F., Haney, M., Tidey, J., Vivian, J., & Weerts, E. M. (1994). In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Monahan, J. (1992). Mental disorder and violent behavior. American Psychologist, 47, 511-521.

Monahan, J., & Steadman, H. J. (1994). Toward a rejuvenation of risk assessment research. In Monahan, J. and Steadman, H. J. (Eds.) Violence and mental disorder: Developments in risk assessment. Chicago: The University of Chicago Press.

Murray, C., & Lopez, A. (1996). Evidence-based health policy---Lessons from

the Global Burden of Disease Study. Science, 274(5288), 740-743.

Murphy, D. (1998). Personal communication. Oklahoma State Bureau Investigation, Uniform Crime Reporting Division.

Noam, G. (1996). High-risk youth: Transforming our understanding of human development. Human Development, 39, 1-17.

De Obaldia, R., & Parsons, O. (1984). Reliability and validity of the primary/secondary alcoholism classification questionnaire and the Hk/MBD Childhood Symptoms Checklist. Journal of Clinical Psychology, 40(5), 1257-1263.

Oklahoma State Bureau of Investigation (1995). State of Oklahoma Uniform Crime Report: Annual report.

Olweus, D. (1979). Stability of aggressive reaction patterns in males: A review. Psychological Bulletin, 86, 852-875.

Parke, R. D., & Slaby, R. G. (1983). The development of aggression. In E. M. Hetherington's (Ed.) Socialization, personality, and social development. Volume IV of P. H. Mussen (Ed.) Handbook of Child Psychology, Fourth Edition. New York: John Wiley & Sons.

Patterson, G. R., & Capaldi, D. M. (1991). Antisocial parents: Unskilled and vulnerable. In P. A. Cowan and M. Hetherington (Eds.) Family Transitions, Chapter Z, 195-218. Hillsdale, NJ: Lawrence Erlbaum Associates.

Patterson, G. R., DeBaryshe, B. D., & Ramsey, E. (1989). A developmental perspective on antisocial behavior. American Psychologist, 44, 329-335.

Perris, C., Arrindell, W. A., Perris, H., van der Ende, M. M., Benjaminsen, S., Ross, M., Eisemann, M., & del Vecchio, M. (1985). Cross-national study of perceived parental rearing behavior in healthy subjects from Australia, Denmark, Italy, The Netherlands, Sweden: pattern and level comparisons.

Perris, C., Jacobsson, L., Lindstrom, H., von Knorring, L., & Perris, H. (1980). Development of a new inventory for assessing memories of parental rearing behavior. Acta Psychiatrica Scandinavica, 61, 265-274.

Plomin, R. (1994). Genetics and experience: The interplay between nature and nurture. Thousand Oaks, CA: Sage Publications.

Pollak, O. (1950). The criminality of women. Philadelphia: University of Pennsylvania Press.

Pollock-Byrne, J. M. (1990). Women, prison, and crime. Pacific Grove, CA: Brooks/Cole Publishing.

Rasko, G. (1976). The victim of the female killer. Victimology, 1, 396-402.

Regier, D., Farmer, M., Rae, D., Locke, B., Keith, S., Judd, L., & Goodwin, F. (1990). Comorbidity of mental disorders with alcohol and other drug abuse: Results from the Epidemiologic Catchment Area (ECA) Study. Journal of the American Medical Association, 264(19), 2511-2518.

Reiss, A. J., Jr., & Roth, A. J. (1993). Understanding and preventing violence. Washington, D. C.: National Academy Press.

Reiss, A. J., Jr., & Roth, A. J. (1994). Understanding and preventing violence.

Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Rivera, B., & Widom, C. S. (1990). Childhood victimization and violent offending. **Violence and Victims, 5(1), 19-34.**

Robertson, G. (1990). Correlates of crime among women offenders. **Medicine, Science, and the Law, 30(2), 165-174.**

Robertson, R. G., Bankier, R. G., & Schwartz, L. (1987). The female offender: A Canadian study. **Canadian Journal of Psychiatry, 32, 749-755.**

Robins, L. N. (1978). Sturdy childhood predictors of adult antisocial behaviour: replications from longitudinal studies. **Psychological Medicine, 8, 611-622.**

Robins, R. W., John, O. P., Caspi, A., Moffitt, T. E., Stouthamer-Loeber, M. (1996). Resilient, over-controlled, and under-controlled boys: Three replicable personality types. **Journal of Personality and Social Psychology, 70(1), 157-171.**

Rodgers, W. (1995). Analysis of cross-validated data. In L. G. Grimm and P. R. Yarnold (Eds.), Reading and understanding multivariate statistics. Washington, D.C.: American Psychological Association.

Rohner, R. P., Kean, K. J., & Cournoyer, D. E. (1991). Effects of corporal punishment, perceived caretaker warmth, and cultural beliefs on the psychological adjustment of children in St. Kitts, West Indies. **Journal of Marriage and Family, 53, 681-693.**

Rosenbaum, A., & O'Leary, R. D. (1981). Marital violence: Characteristics of

abusive couples. Journal of Consulting and Clinical Psychology, 49(1), 63-76.

Rosenberg, M. L., & Mercy, J. A. (1991). Introduction. In M. L. Rosenberg and M. A. Fenley (Eds.) Violence in America: A Public Health Approach. New York: Oxford University Press.

Rosenberg, M. L., & Mercy, J. A. (1991b). Assaultive violence. In M. L. Rosenberg and M. A. Fenley (Eds.) Violence in America: A Public Health Approach (pp. 14-50). New York: Oxford University Press.

Ross, M. W., Campbell, R. L., & Clayer, J. R. (1982). New inventory for measurement of parental rearing patterns: An English form of the EMBU. Acta Psychiatrica Scandinavica, 66, 499-507.

Roth, J. A. (1994). Psychoactive substances and violence. Research in Brief, February, 1994. Washington, D.C.: Department of Justice.

Rothbaum, F., Rosen, K. S., Pott, M., Beatty, M. (1995). Early parent-child relationships and later problem behavior: A longitudinal study. Merrill-Palmer Quarterly, 41(2), 133-151.

Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolfe (Eds.), Primary prevention of psychopathology: 3. Social competence in children. Hanover, N. H.: University Press of New England.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. American Journal of Orthopsychiatry, 57, 316-331.

Rutter, M., & Giller, H. (1983). Juvenile delinquency: Trends and perspectives. Harmondworth: Penguin.

Sameroff, A. J., Seifer, R., Baldwin, A., & Baldwin, C. (1993). Stability of intelligence from preschool to adolescence: The influence of social and family risk factors. Child Development, 64, 80-97.

Sampson, R. J., & Lauritsen, J. (1994). Violent victimization and offending: Individual-, situational-, and community-level risk factors. In A. J. Reiss, Jr. and J. A. Roth (Eds.) Understanding and preventing violence, Vol. 3: Social Influences. Washington, D. C.: National Academy Press.

Sanson, A., Smart, D., Prior, M., & Oberklaid, F. (1993). Journal of the American Academy of Child and Adolescent Psychiatry, 32(6), 1207-1216.

Sattler, J. M. (1982). Assessment of children. 3rd Edition. San Diego: Sattler.

Sheeber, L. B. (1995). Empirical dissociations between temperament and behavior problems: A response to the Sanson, Prior, and Kyrios Study. Merrill-Palmer Quarterly, 41(4), 554-561.

Shipley, W. C. (1940). A self-administering scale for measuring intellectual impairment and deterioration. Journal of Psychology, 9, 371-377.

Simon, R. J., & Baxter, S. (1989). Gender and violent crime. In N. A. Weiner and M. E. Wolfgang (Eds.), Violent crime, violent criminals. Newbury, CA: Sage Publications.

Simon, R. J., & Landis, J. (1991). The crimes women commit, the punishment

they receive. Lexington, MA: Lexington Books.

Simpson, S. (1991). Caste, class, and violent crime: Explaining differences in female offending. Criminology, 29(1), 115-135.

Smith, C., & Thornberry, T. P. (1995). The relationship between childhood maltreatment and adolescent involvement in delinquency. Criminology, 33(4), 451-481.

Smith, D. (1998). Personal communication about logistic regression analysis. University of Oklahoma College of Public Health, Oklahoma City, OK.

Sommers, I., & Baskin, D. R. (1993). The situational context of violent female offending. Journal of Research in Crime and Delinquency, 30(2), 136-162.

Sommers, I., & Baskin, D. R. (1994). Factors related to female adolescent initiation into violent street crime. Youth & Society, 25(4), 468-489.

Spaccarelli, S., Coatsworth, J. D., & Bowden, B. S. (1995). Exposure to serious family violence among incarcerated boys: Its association with violent offending and potential mediating variables. Violence and Victims, 10(3), 163-182.

Spielberger, C., Gorsuch, R., Lushene, R. Vagg, P., & Jacobs, G. (1983). Manual for the State-Trait Anxiety Inventory: STAI Form Y. Palo Alto, CA: Consulting Psychologists Press.

Speckart, G., & Anglin, M. D. (1986). Narcotics and crime: A causal modeling approach. Journal of Quantitative Criminology, 2(1), pp. 3-28.

Spielberger, C. D., Gorsuch, R. L., Lushene, R. E., Vagg, P. R., & Jacobs, G.

A. (1983). Manual for the State-Trait Anxiety Inventory. Palo Alto, CA: Consulting Psychology Press.

Steadman, H. J., Monahan, J., Appelbaum, P. S., Grisso, T., Mulvey, E. P., Roth, L. H., Robbins, P. C., & Klassen, D. (1994). Designing a new generation of risk assessment research. In J. Monahan and H. J. Steadman (Eds.) Violence and mental disorder. Chicago: University of Chicago Press.

Straus, M. A. (1980). Victims and aggressors in marital violence. American Behavioral Scientist, 23, 681-704.

Straus, M. A. (1991). Discipline and deviance: Physical punishment of children and violence and other crime in adulthood. Social Problems, 38(2), 133-154.

Straus, M. A., & Gelles, R. J. (1986). Change in family violence from 1975-1985. Journal of Marriage and Family, 48, 465-479.

Sullivan-Cosetti, M. (1988). An exploratory study of the common and recurring factors present in juvenile female violent offenders referred to juvenile courts nationwide for the crimes of robbery and aggravated assault. Unpublished doctoral dissertation, University of Pittsburgh, Pittsburgh, PA.

Sutherland, E. H. (1931). Mental deficiency and crime. In K. Young (ed.) Social attitudes. New York: Holt.

Sutker, P. B., Bugg, F., & West, F. A. (1993). Antisocial personality disorder. In P. B. Sutker and H. Adams (Eds.) Comprehensive handbook of psychopathology, second edition, 337-369. New York: Plenum.

Swanson, J. W., Holzer, C. E., Ganju, V. K., & Jono, R. T. (1990). Violence and psychiatric disorder in the community: Evidence from the Epidemiologic Catchment Area Surveys. Hospital and Community Psychiatry, 41(7), 761-770.

Swanson, J. W., & Holzer, C. E. (1991). Violence and ECA data. A letter. Hospital and Community Psychiatry, 42(9), 954-955.

Swanson, J. W. (1994). Mental disorder, substance abuse, and community violence: An epidemiological approach. In Monahan, J. and Steadman, H. J. (Eds.) Violence and mental disorder: Developments in risk assessment. Chicago: The University of Chicago Press.

Tartar, R. E. (1979). Minimal brain dysfunction as an etiological predisposition to alcoholism. Paper presented at the Conference "Evaluation of the Alcoholics: Implication for research , theory and treatment." University of Connecticut, Center for Drug and Alcohol Studies, Farmington.

Tedeschi, J. T. & Felson, R. B. (1994). Violence, aggression, and coercive actions. Washington, D. C.: American Psychological Association.

Teplin, L. A. (1995). The prevalence of severe mental disorder among mail urban jail detainees: Comparison with the epidemiological catchment area program. American Journal of Public Health, 80, 663-669.

Teplin, L. A., Abram, K. M., & McClelland, G. M. (1994). Does psychiatric disorder predict violent crime among released jail detainees? American Psychologist, 49(4), 335-342.

Toothaker, L. (1998). Personal communication about logistic regression analysis. University of Oklahoma, Department of Psychology, Norman, OK.

Travis, J. (1995). Comment. National Institute of Justice Journal, August, Issue No. 229, (1).

Trickett, P., & Susman, E. J. (1988). Parental perceptions of child-rearing practices in physically abusive and nonabusive families. Developmental Psychology, 24(2), 270-276.

United States Department of Justice (1994). Domestic violence: Violence between intimates. Washington, DC, U. S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.

U. S. Department of Justice (1995). National Crime Survey. Washington: U.S. Government.

Ward, D. A., Jackson, M., & Ward, R. (1979). Crimes of violence by women. In F. Adler and R. Simon (Eds.), The criminology of deviant women. Boston: Houghton Mifflin.

Weisheit, R. (1993). Structural correlates of female homicide patterns. In A. V. Wilson (Ed.) Homicide: The victim-offender connection. Cincinnati, OH: Anderson Publishing Company.

Weiss, B., Dodge, K. A., Bates, J. E., & Pettit, G. S. (1992). Some consequences of early harsh discipline: Child aggression and maladaptive social information processing style. Child Development, 63, 1321-1335.

Wellisch, J., Prendergast, M. L., & Anglin, M. D. (1994). Drug-abusing women offenders: Results of a national survey. National Institute of Justice: Research in Brief, October, 1994. Washington, D. C.: U. S. Department of Justice.

Werner, E. E. (1987). Vulnerability and resiliency in children at risk for delinquency: A longitudinal study from birth to adulthood. In J. D. Burchard & S. N. Burchard (Eds.), Primary prevention of psychopathology: Vol. 10. Prevention of delinquent behavior (pp. 16-43). Newbury Park, CA: Sage.

Werner, E. E., & Smith, R. S. (1982). Vulnerable but invincible: A longitudinal study of resilient children and youth. New York: Adams, Bannister, Cox.

Werner, E. E., & Smith, R. S. (1992). Overcoming the odds: High risk children from birth to adulthood. Ithaca, NY: Cornell University Press.

Wessely, S., & Taylor, P. J. (1991). Madness and crime: criminology versus psychiatry. Criminal Behavior and Mental Health, 1, 193-228.

White, J. L., Moffitt, T. E., & Silva, P. (1989). A prospective replication of the protective effects of IQ in subjects at high risk for juvenile delinquency. Journal of Consulting and Clinical Psychology, 57, 719-724.

White, J. L., Moffitt, T. E., Earls, F., Robins, L., & Silva, P. (1990). How early can we tell?: Predictors of childhood conduct disorder and adolescent delinquency. Criminology, 28, 507-534.

White, J. L., Moffitt, T. E., Caspi, A., Bartusch, D. J., Needles, D. J., &

Stouthamer-Loeber, M. (1994). Measuring impulsivity and examining its relationship to delinquency. Journal of Abnormal Psychology, 103(2), 192-205.

Widiger, T. A., & Trull, T. J. (1994). Personality disorders and violence. In J. Monahan and H. J. Steadman (Eds.) Violence and mental disorder: Developments in risk assessment. Chicago: University of Chicago Press.

Widom, C. S. (1989). Child abuse, neglect, and adult behavior: Research design and findings on criminality, violence, and child abuse. American Journal of Orthopsychiatry, 59(3), 355-367.

Widom, C. S. (1991). Avoidance of criminality in abused and neglected children. Psychiatry, 54, 162-174.

Widom, C. S., & Ames, M. A. (1994). Criminal consequences of childhood sexual victimization. Child Abuse and Neglect, 18(4), 303-318.

Wilson, J. Q., & Herrnstein, R. J. (1985). Crime and human nature. New York: Simon and Schuster.

Wilson, M., & Daly, M. (1992). An evolutionary psychological perspective on male sexual proprietariness and violence against wives. Violence and Victims, 8(3), 271-294.

Wolfgang, M. E. (1958). Patterns in Criminal Homicide. University of Pennsylvania Press.

Wright, R. (1995). The biology of violence: The new Darwinians weigh in on the poverty-versus-Prozac debate over inner-city violence which derailed a federal

program. The New Yorker, 71(3), 68-77.

Wright, R. E. (1995b). Logistic regression. In L. G. Grimm and P. R. Yarnold (Eds.), Reading and understanding multivariate statistics. Washington, D.C.: American Psychological Association.

Yarvis, R. M. (1994). Patterns of substance abuse and intoxication among murderers. Bulletin of the American Academy of Psychiatry and the Law, 22(1), 133-144.

Yoshikawa, H. (1994). Prevention as cumulative protection: Effects of early family support and education on chronic delinquency and its risks. Psychological Bulletin, 115(1), 28-54.

Zachary, R. A. (1986). Shipley Institute of Living Scale, Revised Manual. Los Angeles: Western Psychological Services.

Appendix D
Consent Form

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

I. _____
(Name) (DOC Number) (Date Form Signed)

do hereby consent to participate in research by:

(Name or title and address of person
conducting the research)

Expiration date (if applicable) _____

AUTHORIZATION: I certify that this consent has been made freely, voluntarily, and without coercion, after a fair and understandable explanation of the nature of the research activity, the purpose, and the procedures to be followed.

(Offender Signature)

(Witness)

UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER
INFORMED CONSENT

I, _____, voluntarily agree to
(subject)
participate in this study entitled "Correlates of Psychopathology
in Women Prisoners."

Purpose. I understand that this study is designed to examine the prevalence of psychiatric disorders in women prisoners, to ascertain whether there is a relationship between the presence and type of psychiatric symptoms and violence, and to examine the relationship between certain family factors and other factors which may influence both psychopathology and criminal behavior.

Description of Study. I will complete a series of paper and pencil tests and questionnaires given in a group setting taking about one and one half hours. In addition, I will be interviewed using structured interviews for psychiatric disorders. The interview requires about one to one and one half hours. In addition, the investigators will review my legal and prison records.

Benefits. Refreshments will be provided after my participation, but otherwise, there are no direct benefits to me for participating in this study.

Possible Risks. There are no known risks associated with my participation in this study though I may become emotionally upset as a result of some of the questions asked or feelings aroused in connection with the study.

In the Event of Injury. I understand that no compensation will be available to me from the University of Oklahoma or the State of Oklahoma Teaching Hospitals or their employees if I suffer emotional injury as a result of my participation in this study.

Subject Assurances. By signing this consent form, I acknowledge that my participation in this study is voluntary. I also acknowledge that I have not waived any of my legal rights or released the University of Oklahoma from liability for negligence.

My participation in this study is confidential and I will not be identifiable in any reports resulting from this study. No information except a consultation form identifying any psychiatric disorder I might have and a copy of this consent will be kept in my prison file.

I may revoke my consent and withdraw from this study at any time without penalty or loss of benefits. My treatment by, and relations with the physicians and staff at the University of Oklahoma Health Sciences Center, now and in the future, will not be affected in anyway if I refuse to participate, or if I enter the program and withdraw later.

If I have any questions or need to report an adverse effect about the research procedures, I will contact the principal investigator, Dr. Betty Pfefferbaum by calling (405) 271-4219 during the day or (405) 325-1000 at night or on weekends, or Dr. Sara Jo Nixon at (405) 271-2474.

If I have any questions about my rights as a research subject, I may take them to the Director of Research Administration, University of Oklahoma Health Sciences Center, Room 121, Library Building, telephone number (405) 271-2090.

Signatures. I have read this informed consent document, understand its contents and freely consent to participate in this study under the conditions described in this document. I understand that I will receive a copy of this signed consent form.

(date)

(subject)

(date)

(witness)

Appendix E

Instruments

MABEL BASSETT ASSESSMENT PROJECT

Betty Pfefferbaum, M.D.

Sara Jo Nixon, Ph.D.

Group Screen Packet

Subject number: _____ **Today's Date:** _____
Birth Date: _____ **Age:** _____

Race: (check __ only one)

- ☐ **1. African American**
- ☐ **2. American Indian**
- ☐ **3. Caucasian**
- ☐ **4. Hispanic**
- ☐ **5. Other (Please Specify) _____**

Years of Completed Education: _____
GED = 12 years: include technical training
add 1 year for every 30 college hours completed

Usual Occupation: _____

Current Incarceration

Age at time of Incarceration: _____
Time served to date for current offense: _____
Time sentenced for current offense: _____
Anticipated Release Date: _____

Number of previous incarcerations (not jail): _____
Total time (in Years) you have spent
in state or federal prisons: _____

**DO NOT WRITE YOUR NAME ON ANY OF THE
FOLLOWING PAGES!!!!**

GENERAL HEALTH

10. Are you currently taking any medications on a regular basis?

No _ Yes _ If yes, list medications and the reason for taking them.

Med #1	_____	Taking med for:	_____
Med #2	_____	Taking med for:	_____
Med #3	_____	Taking med for:	_____
Med #4	_____	Taking med for:	_____
Med #5	_____	Taking med for:	_____

11. Have you ever seen a physician, psychologist or counselor for mental, psychological or emotional problems? No _ Yes _

If yes, were you given a diagnosis?

No _ Yes _ → What was the diagnosis? _____



Were you given medication? No _ Yes _

If yes, what medication were you given? _____

12. During childhood, were you ever diagnosed as having:

Attention Deficit Disorder (ADD)?	Yes _ No _
Conduct Disorder?	Yes _ No _
Oppositional/ Defiant disorder?	Yes _ No _
Depression?	Yes _ No _
Hyperactivity?	Yes _ No _
Learning Disability?	Yes _ No _

13. Have any of your blood relatives served time in a state or federal prison?

No _ Yes _

If yes, which relatives (brother, sister, etc. DO NOT LIST NAMES) and what offenses were they incarcerated for?

Relative:	_____	In prison for:	_____
Relative:	_____	In prison for:	_____
Relative:	_____	In prison for:	_____
Relative:	_____	In prison for:	_____
Relative:	_____	In prison for:	_____

subject number: _____

Date: _____

GENERAL INFORMATION

1. Were you employed at the time of your most recent incarceration?

No _ Yes _ IF yes, what was your job? _____

How much (per year) did you make on that job? _____

2. Were you receiving state or federal assistance at the time of your most recent incarceration? No _ Yes _

3. What is the offense for which you are currently incarcerated?

4. Do you believe that you committed a violent offense? Yes _ No _

5. Did you receive any other sentences which you will have to serve after your current sentence is completed? Yes _ No _

If yes, what are those offenses and sentences?

ALCOHOL AND DRUG USE

6. How do you believe that your personal use of alcohol or drugs is associated with your current offense? (check one)

☐ Not at all. My use of alcohol and drugs is not related to my current offense.

☐ Somewhat related. I was not using at the time of the crime, but I had used earlier that same day.

☐ Very related. I was under the influence of alcohol or drugs at the time I committed the crime, but the crime itself was not a drug offense.

Directly related.

☐ The crime was directly related to buying, selling or dealing with drugs.

☐ The crime was committed to obtain money for drugs.

MATERNAL INFORMATION

7. Have you ever been pregnant? Yes _ No _

8. How old were you the first time you were pregnant (even if outcome was a miscarriage or abortion)? _____

9. How old were you at the time of the birth of your first child? _____

Instructions: In the test below, the first word in each line is printed in capital letters. Opposite it are four other words. Circle the word which means the same, or most nearly the same as the first word. If you don't know, guess. Be sure to circle the one word in each line that means the same thing as the first word.

EXAMPLE:

LARGE

red

big

silent

wet

- | | | | | |
|----------------|-------------|------------|------------|-------------|
| 1. TALK | draw | eat | speak | sleep |
| 2. PERMIT | allow | sew | cut | drive |
| 3. PARDON | forgive | pound | divide | tell |
| 4. COUCH | pin | eraser | sofa | glass |
| 5. REMEMBER | swim | recall | number | defy |
| 6. TUMBLE | drink | dress | fall | think |
| 7. HIDEOUS | silvery | tilted | young | dreadful |
| 8. CORDIAL | swift | muddy | leafy | hearty |
| 9. EVIDENT | green | obvious | skeptical | afraid |
| 10. IMPOSTOR | conductor | officer | book | pretender |
| 11. MERIT | deserve | distrust | fight | separate |
| 12. FASCINATE | welcome | fix | stir | enchant |
| 13. INDICATE | defy | excite | signify | bicker |
| 14. IGNORANT | red | sharp | uninformed | precise |
| 15. FORTIFY | submerge | strengthen | vent | deaden |
| 16. RENOWN | length | head | fame | loyalty |
| 17. NARRATE | yield | buy | associate | tell |
| 18. MASSIVE | bright | large | speedy | low |
| 19. HILARITY | laughter | speed | grace | malice |
| 20. SMIRCHED | stolen | pointed | remade | soiled |
| 21. SQUANDER | tease | belittle | cut | waste |
| 22. CAPTION | drum | ballast | heading | ape |
| 23. FACILITATE | help | turn | strip | bewilder |
| 24. JOCOSE | humorous | paltry | fervid | plain |
| 25. APPRISE | reduce | strew | inform | delight |
| 26. RUE | eat | lament | dominate | cure |
| 27. DENIZEN | senator | inhabitant | fish | atom |
| 28. DIVEST | dispossess | intrude | rally | pledge |
| 29. AMULET | charm | orphan | dingo | pond |
| 30. INEXORABLE | untidy | involltal | rigid | sparse |
| 31. SERRATED | dried | notched | armed | blunt |
| 32. LISSOME | moldy | loose | supple | convex |
| 33. MOLLIFY | mitigate | direct | pertain | abuse |
| 34. PLAGIARIZE | appropriate | intend | revoke | maintain |
| 35. ORIFICE | brush | hole | building | lute |
| 36. QUERULOUS | maniacal | curious | devout | complaining |
| 37. PARIAN | outcast | priest | lentil | locker |
| 38. ABET | waken | ensue | incite | placate |
| 39. TEMERITY | rashness | timidity | desire | kindness |
| 40. PRISTINE | vain | sound | first | level |

Instructions: Complete the following by filling in either a number or a letter for each dash (____). Do the items in order, but don't spend too much time on any one item.

EXAMPLE: A B C D E

-
- (1) 1 2 3 4 5 ____
 - (2) white black short long down ____
 - (3) AB BC CD D ____
 - (4) Z Y X W V U ____
 - (5) 12321 23432 34543 456 ____
 - (6) NE/SW SE/NW E/W N/ ____
 - (7) escape scape cape ____
 - (8) oh ho rat tar mood ____
 - (9) A Z B Y C X D ____
 - (10) tot tot bard drab 537 ____
 - (11) mist is wasp as pint in tone ____
 - (12) 57326 73265 32657 26573 ____
 - (13) knit in spud up both to stay ____
 - (14) Scotland landscape scapegoat _____ ee
 - (15) surgeon 1234567 snore 17635 rogue _____
 - (16) tam tan rib rid rat raw hip ____
 - (17) tar pitch throw saloon bar rod fee tip end plank _____ meals
 - (18) 3124 82 73 154 46 13 ____
 - (19) lag leg pen pin big bog rob ____
 - (20) two w four r one o three ____

CHILDHOOD QUESTIONNAIRE

Subj. No. _____ Date _____

Answer each question "Yes," "No," or "Not Sure" as to how it was prior to the age of 13 (before the 8th grade). Circle the answers Yes or No, as to which is most like yourself at that age. "Not Sure" should be circled only if you are completely unable to make a decision.

1. Infant sleep problems (may have needed medication). . . Yes No Not Sure
2. Infant feeding problems Yes No Not Sure
3. Delayed time in walking Yes No Not Sure
4. Delayed speech development. Yes No Not Sure
5. Poor Speech Yes No Not Sure
6. Poor coordination Yes No Not Sure
7. Strabismus (cross-eyed) Yes No Not Sure
8. Difficulty learning to read Yes No Not Sure
9. Difficulty deciding whether left- or right-handed . . Yes No Not Sure
10. Difficulty learning to write. Yes No Not Sure
11. Poor handwriting. Yes No Not Sure
12. Difficulty in mathematics Yes No Not Sure
13. Overactive. Yes No Not Sure
14. Couldn't sit still. Yes No Not Sure
15. Talk too much and/or too loudly Yes No Not Sure
16. Wear out toys, shoes, and clothes Yes No Not Sure
17. Fidget (can't sit still). Yes No Not Sure
18. Get into things Yes No Not Sure
19. Unpredictable Yes No Not Sure
20. Couldn't tolerate delay Yes No Not Sure
21. Impulsive (did things with thinking). Yes No Not Sure
22. Couldn't accept correction. Yes No Not Sure
23. Temper Tantrums Yes No Not Sure
24. Fights. Yes No Not Sure

25.	Destructive	Yes	No	Not Sure
26.	Unresponsive to discipline.	Yes	No	Not Sure
27.	Didn't complete projects.	Yes	No	Not Sure
28.	Short attention span.	Yes	No	Not Sure
29.	Daydreamed.	Yes	No	Not Sure
30.	Moved from one object to another in class	Yes	No	Not Sure
31.	Didn't follow directions.	Yes	No	Not Sure
32.	Lying	Yes	No	Not Sure
33.	Felt left out	Yes	No	Not Sure
34.	Unpopular with peers.	Yes	No	Not Sure
35.	Stealing.	Yes	No	Not Sure
36.	Vandalism	Yes	No	Not Sure
37.	Withdrawn	Yes	No	Not Sure
38.	Accident prone.	Yes	No	Not Sure
39.	Demanded attention and affection.	Yes	No	Not Sure
40.	Truancy (skipped school).	Yes	No	Not Sure
41.	Not working up to ability	Yes	No	Not Sure
42.	Rocking (rocking while standing or sitting)	Yes	No	Not Sure
43.	Difficult toilet training	Yes	No	Not Sure
44.	Mirror vision, i.e., reading backwards.	Yes	No	Not Sure
45.	Easily frustrated	Yes	No	Not Sure
46.	Perseveration (get one thing on mind and it stays there for long periods of time, relating unrelated things to it.	Yes	No	Not Sure
47.	Constantly touch other people or things	Yes	No	Not Sure
48.	Overly aggressive	Yes	No	Not Sure
49.	Left back in school	Yes	No	Not Sure
50.	Responded best to structured, rigid atmosphere where decisions were made for me.	Yes	No	Not Sure

Subject No. _____

EMBU
MEMORIES OF CHILDHOOD

Date _____

Below are a number of questions concerning your childhood.

Please read through the following instructions carefully before filling out the questionnaire.

1. When filling out this questionnaire, it is essential that you try to remember your parents' behaviour towards you as experienced by you. Even though it is sometimes difficult to recall exactly how our parents behaved towards us when we were very young, each of us does have certain memories of what principles they used in our upbringing.
2. For each question, please circle the responses applicable to your mother's and father's behaviour towards you. Read through each question carefully and consider which one of the possible answers applies to you. Answer separately for your mother and your father.

for example

My parents were kind to me				
	No never	Yes occasionally	Yes often	Yes, most of the time
Father	1	2	3	4
Mother	1	2	3	4

1. I felt that my parents interfered with everything I did.

Father 1 2 3 4 Mother 1 2 3 4

2. My parents showed with words and gestures that they liked me.

Father 1 2 3 4 Mother 1 2 3 4

3. I was spoiled by my parents in comparison with my sister(s) and/or brother(s).

Father 1 2 3 4 Mother 1 2 3 4

4. Did you feel that your parents liked you?

Father 1 2 3 4 Mother 1 2 3 4

5. My parents usually refused to speak to me for a long time if I had done anything silly.

Father 1 2 3 4 Mother 1 2 3 4

6. It happened that my parents punished me even for small offenses.

Father 1 2 3 4 Mother 1 2 3 4

Subject No. _____

Date _____

7. My parents tried to influence me to become something "posh".
Father 1 2 3 4 Mother 1 2 3 4
8. It happened that I was disappointed with my parents because I did not get something I wanted.
Father 1 2 3 4 Mother 1 2 3 4
9. I think that either of my parents wished I had been different in some way.
Father 1 2 3 4 Mother 1 2 3 4
10. My parents let me have things my sister(s) and/or brother(s) were not allowed to have.
Father 1 2 3 4 Mother 1 2 3 4
11. If I had done something foolish, I could then go to my parents and make everything right again by asking their forgiveness.
Father 1 2 3 4 Mother 1 2 3 4
12. My parents always wanted to decide how I should be dressed or how I should look.
Father 1 2 3 4 Mother 1 2 3 4
13. I felt that my parents liked my brother(s) and/or sister(s) more than they liked me.
Father 1 2 3 4 Mother 1 2 3 4
14. My parents treated me unjustly (badly) in comparison with how they treated my sister(s) and/or brother(s).
Father 1 2 3 4 Mother 1 2 3 4
15. It happened that either of my parents forbade me to do things other children were allowed to do because they were afraid that something might happen to me.
Father 1 2 3 4 Mother 1 2 3 4
16. It happened that, as a child, I was beaten or scolded in the presence of others.
Father 1 2 3 4 Mother 1 2 3 4

Subject No. _____

Date _____

17. My parents usually cared about what I did in the evenings.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
18. If things went badly for me, I then felt that my parents tried to comfort and encourage me.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
19. Did your parents usually worry about your health unnecessarily?
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
20. It happened that my parents gave me more corporal punishment than I deserved.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
21. My parents would become angry if I did not help at home with what I was asked to do.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
22. My parents would look sad or in some other way show that I had behaved badly so that I got real feelings of guilt.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
23. I felt that it was difficult to approach my parents.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
24. It happened that my parents narrated something I had said or done in front of others so that I felt ashamed.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
25. I felt that my parents liked me more than they liked my sister(s) and/or brother(s).
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
26. My parents usually showed that they were interested in my getting good marks.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
27. If I had a difficult task in front of me, I then felt support from my parents.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|

Subject No. _____

Date _____

28. I was treated as the "black sheep" or "scapegoat" of the family.

Father 1 2 3 4 Mother 1 2 3 4

29. Did it happen your parents wished you had been like somebody else?

Father 1 2 3 4 Mother 1 2 3 4

30. Did your parents say: "You who are so big", or "You who are a boy/girl shouldn't act like that, should you"?

Father 1 2 3 4 Mother 1 2 3 4

31. My parents usually criticized the friends I liked to frequent.

Father 1 2 3 4 Mother 1 2 3 4

32. I felt my parents thought it was my fault when they were unhappy.

Father 1 2 3 4 Mother 1 2 3 4

33. My parents tried to spur me on to become the best.

Father 1 2 3 4 Mother 1 2 3 4

34. My parents would demonstrate that they were fond of me.

Father 1 2 3 4 Mother 1 2 3 4

35. Did you feel that your parents trusted you so that you were allowed to do things on your own?

Father 1 2 3 4 Mother 1 2 3 4

36. I think that my parents respected my opinions.

Father 1 2 3 4 Mother 1 2 3 4

37. I felt that my parents wanted to be together with me.

Father 1 2 3 4 Mother 1 2 3 4

38. I think my parents were mean and grudging towards me.

Father 1 2 3 4 Mother 1 2 3 4

Subject No. _____

Date _____

39. My parents used expressions like: "If you do that you will make me sad".
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
40. When I came home, I then always had to account for what I had been doing, to my parents.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
41. I think that my parents tried to make my adolescence stimulating, interesting and instructive (for instance, by giving me good books, arranging for me to go to camps, taking me to clubs).
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
42. My parents usually praised me.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
43. Would your parents use expressions like "Is this the thanks we get for having done so much for you, and for having sacrificed so much for your sake?"
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
44. It happened that I got a bad conscience towards my parents because I behaved in a way they did not desire.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
45. I think that my parents put high demands on me when it came to school marks, sport performances or similar things.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
46. I could seek comfort from my parents if I was sad.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
47. It happened that I was punished by my parents without having done anything.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
48. My parents allowed me to do the same things as my friends did.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|

Subject No. _____

Date _____

49. My parents often said that they did not approve of my behavior at home.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
50. My parents usually criticized me and told me how lazy and useless I was in front of others.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
51. Did your parents usually take an interest in what kinds of friends you frequented?
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
52. Of my sister(s) and/or brother(s), I was the one whom my parents blamed if anything had happened.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
53. Did your parents accept you as you were?
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
54. My parents were usually abrupt to me.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
55. My parents would punish me hard, even for trifles.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
56. It happened that my parents beat me for no reason.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
57. It happened that I wished my parents would worry less about what I was doing.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
58. My parents usually engaged themselves in my interests and hobbies.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
59. I usually got beaten by my parents.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|

Subject No. _____

Date _____

60. I was usually allowed to go where I liked without my parents caring too much.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
61. My parents put decisive limits for what I was and was not allowed to do, to which they then adhered rigorously.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
62. My parents treated me in such a way that I felt ashamed.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
63. My parents let my sister(s) and/or brother(s) have things which I was not allowed to get.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
64. I think that my parents' anxiety that something might happen to me was exaggerated.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
65. I felt that warmth and tenderness existed between me and my parents.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
66. My parents respected the fact that I had other opinions than they had.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
67. It happened that my parents were sour or angry with me without letting me know the cause.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
68. It happened that my parents let me go to bed without food.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
69. I felt that my parents were proud when I succeeded in something I had undertaken.
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|
70. My parents usually favored me in relation to my sister(s) and/or brother(s).
- | | | | | | | | | | |
|--------|---|---|---|---|--------|---|---|---|---|
| Father | 1 | 2 | 3 | 4 | Mother | 1 | 2 | 3 | 4 |
|--------|---|---|---|---|--------|---|---|---|---|

Subject No. _____

Date _____

71. My parents took my part against my sister(s) and/or brother(s) even if I was the guilty one.

Father 1 2 3 4

Mother 1 2 3 4

72. My parents usually hugged me.

Father 1 2 3 4

Mother 1 2 3 4

SEXUAL ABUSE SCALE

It is not uncommon for people to have sexual experiences as children. Often, these experiences are harmless; other times they may be quite distressing. They sometimes occur between same age children, sometimes between children of different ages, and sometimes between children and adults. The following questions refer to these kinds of experiences.

For each question, indicate in part "a" whether or not it occurred *in your childhood*. If it did, then in part "b" indicate the degree to which you experienced it as agreeable or distressing, and in part "c" the degree to which you feel your participation was voluntary or involuntary. If the answer to part "a" is "No", simply go on to the next question.

1. Do you recall talking about sex with another child your own age?
a. ☐ Yes ☐ No
(If the above answer is "Yes," go on to Parts b. and c., indicating your feelings about the experience)
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
2. Do you recall talking about sex with someone whom you thought of as "older," but who was not an adult?
a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
3. Do you recall an adult inappropriately talking to you about sex (in order words for their own reasons, not to tell you things you wanted or needed to know)?
a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
4. Do you recall playing, showing or touching games with someone your own age (i.e., playing "doctor")?
a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
5. Do you recall playing, showing or touching games with someone you thought of as "older" but not an adult?
a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
6. Do you recall an adult looking at you when you were less than fully dressed in a way that you suspect might have had a kind of sexual meaning for that adult?
a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary

7. Do you recall an adult exposing sexual parts of his or her body to you?
- a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
8. Do you remember an adult touching you in a sexual way?
- a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
9. Do you remember an adult causing you to touch him or her in a sexual way?
- a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
10. Do you remember any kind of penetration by a person you considered "older" but not an adult?
- a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary
11. Do you remember any kind of penetration by an adult?
- a. ☐ Yes ☐ No
b. ☐ Very distressing ☐ Somewhat distressing ☐ Agreeable
c. ☐ Forced ☐ Somewhat forced ☐ Voluntary

Key: Items 1 and 4 are filler; they are not scored. Score Item 2, Item 3, and Items 5 through 11 as follows:

b. Very distressing = 2 Somewhat distressing = 1 Agreeable = 0

c. Forced = 2 Somewhat forced = 1 Voluntary = 0.

Items endorsed positive on part "a", but where no distress or force is indicated, are not scored.

Scale score is the sum of the item scores.

BECK DEPRESSION INVENTORY

Choose One Statement Under Each Letter That Best Describes You For The Last Seven Days. Circle the number to the left of the statement you have chosen.

- A. 0 I do not feel sad.
1 I feel sad.
2 I am sad all the time and I can't snap out of it.
3 I am so sad or unhappy that I can't stand it.
- B. 0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel that I have nothing to look forward to.
3 I feel that the future is hopeless and that things cannot improve.
- C. 0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I see is a lot of failures.
3 I feel I am a complete failure as a person.
- D. 0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.
- E. 0 I don't feel particularly guilty.
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.
- F. 0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.
- G. 0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.
- H. 0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

- I. 0 I don't have any thoughts of killing myself.**
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had a chance.
- J. 0 I don't cry any more than usual.**
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now can't cry even though I want to.
- K. 0 I am no more irritated now than I ever am.**
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me.
- L. 0 I have not lost interest in other people.**
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.
- M. 0 I make decisions about as well as I ever could.**
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions than before.
3 I can't make decisions at all any more.
- N. 0 I don't feel I look any worse than I used to.**
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance that make me look unattractive.
3 I believe that I look ugly.
- O. 0 I can work about as well as before.**
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do work at all.
- P. 0 I can sleep as well as usual.**
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

- Q. 0 I don't get more tired than usual.**
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.

- R. 0 My appetite is no worse than usual.**
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all any more.

- S. 0 I haven't lost much weight, if any, lately.**
1 I have lost more than 5 pounds.
2 I have lost more than 10 pounds.
3 I have lost more than 15 pounds.

I am purposely trying to lose weight by eating less.
Yes ____ No ____

- T. 0 I am no more worried about my health than usual.**
1 I am worried about physical problems such as aches and pains; or upset stomach, or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems, that I cannot think about anything else.

- U. 0 I have not noticed any recent change in my interest in sex.**
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

SELF-EVALUATION QUESTIONNAIRE
STAI Form Y-1

Subject No. _____ Examiner _____ Date _____ Time _____

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate HOW YOU FEEL RIGHT NOW, that is, AT THIS MOMENT. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to describe your present feelings best.

	Not At All	Somewhat	Moderately So	Very Much So
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel satisfied	1	2	3	4
9. I feel frightened	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel confused	1	2	3	4
19. I feel steady	1	2	3	4
20. I feel pleasant	1	2	3	4

FAMILY HISTORY DRINKING OR DRUG USE QUESTIONNAIRE

N = NEVER S = SOCIAL A = ALCOHOL D = Drug AD = ALCOHOL & DRUGS

If you have no knowledge of a relative = DK DON'T KNOW

X = Cross out relatives that you have never had.

Maternal Grandmother ☐ Maternal Grandfather ☐ Paternal Grandmother ☐ Paternal Grandfather ☐

Mother's Brothers (Uncles) ☐ ☐ ☐ ☐ ☐ Mother ☐ Mother's Sisters (Aunts) ☐ ☐ ☐ ☐ ☐

Father's Brothers (Uncles) ☐ ☐ ☐ ☐ ☐ Father ☐ Father's Sisters (Aunts) ☐ ☐ ☐ ☐ ☐

Stepmother ☐ Stepfather ☐

Your Brothers ☐ ☐ ☐ ☐ ☐ YOU ☐ Your Sisters ☐ ☐ ☐ ☐ ☐

Current Spouse ☐ Previous Spouse(s) ☐ ☐

Check one or the other

Natural Mother ☐ or Adopted Mother ☐

Natural Father ☐ or Adopted Father ☐

Your Male Children ☐ ☐ ☐ ☐ ☐ Your Female Children ☐ ☐ ☐ ☐ ☐

Ages of Your Children _____

Consequences:	Marital/Relationship	Job	Arrests	Withdrawal	Cirrhosis	Treatment	AA/NA	Black-outs	Disapproval	Passed Out	Abusive	Daily
1) YOU												
2)												
3)												

ALCOHOL USE QUESTIONNAIRE

1. How old were you when you took your first drink of alcohol? _____
(your first taste, even if given to you as a child)
2. How old were you when you first got drunk? _____
3. How many years have you been drinking on a regular basis? _____
(that is, a regular drinking pattern, does not have to be heavy drinking)
4. Do you consider yourself now, or have you ever considered yourself,
to be an alcoholic or problem drinker?

No —

Yes —

→ If yes, how many years have you been
an alcoholic or problem drinker? _____

Since alcohol first became a problem for you,
list all periods of 30 days or longer in which you
did not drink any alcoholic beverages at all.

- | | |
|---------------|----------------|
| 1. When _____ | How Long _____ |
| 2. When _____ | How Long _____ |
| 3. When _____ | How Long _____ |
| 4. When _____ | How Long _____ |

Please continue with questionnaire even if
you are not an alcoholic or problem drinker.

5. How many days ago did you have your last drink? _____
6. During the SIX MONTHS BEFORE INCARCERATION how often did you have
any kind of beverage containing alcohol, whether it was wine,
beer, whiskey or any other drink?

Circle the number that BEST DESCRIBES your normal drinking pattern.

- | | |
|-----------------------------------|---|
| 1 = Three or more times a day | 6 = Two or three times a month |
| 2 = Twice a day | 7 = About once a month |
| 3 = Every day or nearly every day | 8 = Less than once a month, but
at least one time. |
| 4 = Three or four days a week | 9 = No alcohol at all. |
| 5 = One or two days a week | |

7. During the SIX MONTHS BEFORE INCARCERATION how often did you drink any of the following? Circle one number for each type of alcohol.

WINE	BEER	LIQUOR
1 = EVERY DAY	1 = EVERY DAY	1 = EVERY DAY
2 = 5-6 days/wk	2 = 5-6 days/wk	2 = 5-6 days/wk
3 = 3-4 days/wk	3 = 3-4 days/wk	3 = 3-4 days/wk
4 = 1-2 days/wk	4 = 1-2 days/wk	4 = 1-2 days/wk
5 = 3 times/mo or less	5 = 3 times/mo or less	5 = 3 times/mo or less
6 = NONE AT ALL	6 = NONE AT ALL	6 = NONE AT ALL
On an average day, how much did you drink? (1/5, pint, 1/2 gallon, etc.)	On an average day, how much did you drink? (Cans, qts, 6 packs, 12 packs, etc.)	On an average day, how much did you drink? (shot, pint, liter, 1/5, etc.)
Check one: Table wine ____ Fortified wine ____	Check one: 3.2 beer ____ 6.0 beer ____	What Proof: _____

8. During the SIX MONTHS BEFORE INCARCERATION, what is the most you drank in any single 24-hour period? _____

└─ How many days, in the 6 months before incarceration, did you drink that much? _____

9. During the SIX MONTHS BEFORE INCARCERATION, what is the longest period of time that you have gone without drinking any alcohol at all? (how many days in a row) _____

└─ If more than 30 days in a row, when was that period? _____

10. During the SIX MONTHS BEFORE INCARCERATION, how many times did you have black-outs or memory lapses? _____

11. The questions above were about your drinking history over the SIX MONTHS BEFORE INCARCERATION. Please circle one of the following:

1. I have always drunk about the same amount.
2. Before then, I was drinking more than this amount.
3. Before then, I was drinking less than this amount.

DRUG USE QUESTIONNAIRE

DO NOT LIST ALCOHOL AS A DRUG ON THIS QUESTIONNAIRE!!!!

Have you ever abused any drugs other than alcohol?

Yes ☐ No ☐ **→ If no, skip Drug related pages.**



If yes, please answer the following questions:

1. Have you ever used Intravenous drugs?

No ☐ Yes ☐ I used IV drugs: Daily ☐ Weekly ☐
Monthly ☐ Rarely ☐



The drug I injected most often was _____.

I used this drug from _____ to _____.

(What year to what year?)

The last time I used IV drugs was _____.

2. Have you ever sniffed or huffed gas, freon, glue, lighter fluid, rush or other inhalants?

No ☐ Yes ☐ I sniffed or huffed: Daily ☐ Weekly ☐
Monthly ☐ Rarely ☐



The substance I used most often was _____.

I Used this substance from _____ to _____.

(What year to what year?)

The last time I sniffed or huffed was _____.

3. The Drugs I have used Most often are:

The drug I used most often was: _____.

The drug I used second most often was: _____.

The drug I used third most often was: _____.

4. Of all the drugs you ever used,

what was your favorite? _____.

Appendix F
Institutional Review Board Approval



The University of Oklahoma

OFFICE OF RESEARCH ADMINISTRATION

June 2, 1998

Ms. Sharon Kerr
2308 NW 56th Terrace
Oklahoma City, OK 73112

SUBJECT: "Correlates of Psychopathology in Women Prisoners"

Dear Ms. *Sharon* Kerr:

The Institutional Review Board - Norman Campus has reviewed the referenced IRB application which was approved by the Health Sciences Center and finds the HSC-IRB approval acceptable under the reciprocal review procedure in place between the Norman Campus and HSC-Institutional Review Boards.

Sincerely yours,

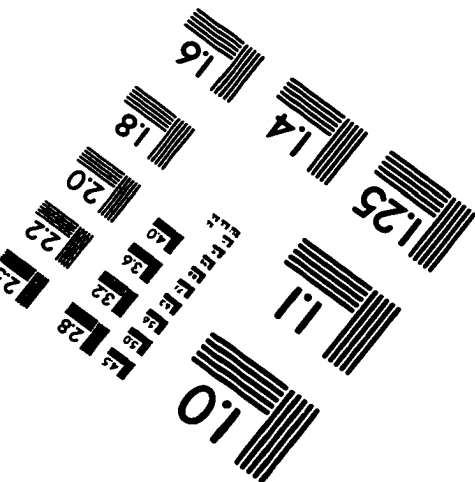
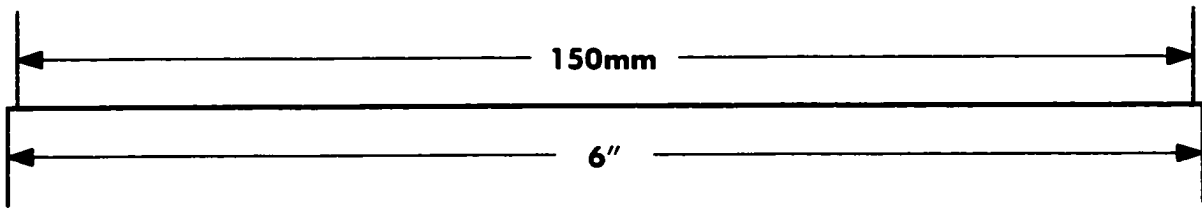
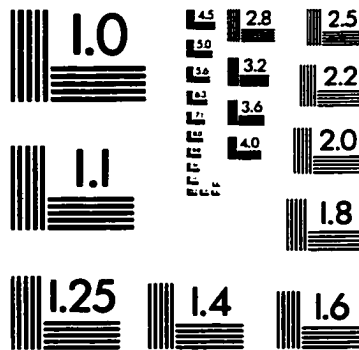
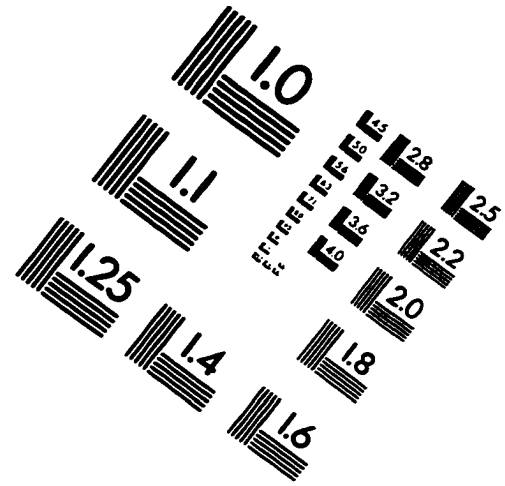
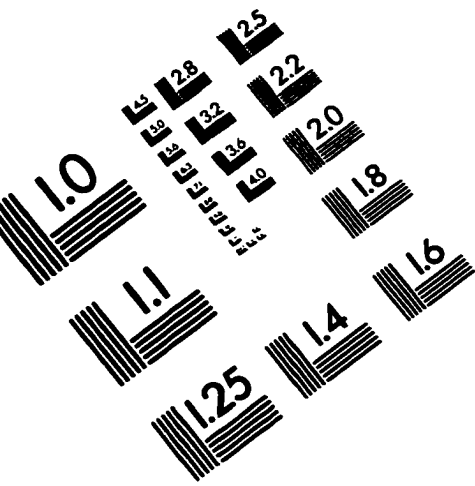
A handwritten signature in cursive script, appearing to read "Karen".

Karen M. Petry
Administrative Officer
Institutional Review Board - Norman Campus

KMP:pw

cc: Dr. E. Laurette Taylor, Chair, IRB - Norman Campus
Dr. Joan L. Walker, Chair, IRB - Health Sciences Center
Dr. Betty Pfefferbaum, Principal Investigator, Psychiatry
Dr. Sara Jo Nixon, Co-Principal Investigator, Psychiatry

IMAGE EVALUATION TEST TARGET (QA-3)



APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved

