

Death Row Inmate Characteristics, Adjustment, and Confinement: A Critical Review of the Literature

Mark D. Cunningham, Ph.D.*
and Mark P. Vigen, Ph.D.

This article reviews and summarizes research on death row inmates. The contributions and weaknesses of death row demographic data, clinical studies, and research based on institutional records are critiqued. Our analysis shows that death row inmates are overwhelmingly male and disproportionately Southern. Racial representation remains controversial. Frequently death row inmates are intellectually limited and academically deficient. Histories of significant neurological insult are common, as are developmental histories of trauma, family disruption, and substance abuse. Rates of psychological disorder among death row inmates are high, with conditions of confinement appearing to precipitate or aggravate these disorders. Contrary to expectation, the extant research indicates that the majority of death row inmates do not exhibit violence in prison even in more open institutional settings. These findings have implications for forensic mental health sentencing evaluations, competent attorney representation, provision of mental health services, racial disparity in death sentences, death row security and confinement policies, and moral culpability considerations. Future research directions on death row populations are suggested. Copyright © 2002 John Wiley & Sons, Ltd.

Over 3,000 inmates are on death row in the United States. Few correctional populations stir greater ambivalence and controversy among criminal justice professionals, forensic mental health experts, legislators, the judiciary, and the public. Many of the concerns of these groups would benefit from empirical data regarding the characteristics of these death row inmates, their pattern of adjustment to prison, and their institutional custody requirements. For example, forensic evaluations at the capital sentencing phase are effectively enhanced by an in-depth

*Correspondence to: Mark D. Cunningham, Ph.D., 500 Chestnut, #1735, Abilene, TX 79602, U.S.A.
E-mail: mdc@bitstreet.com

Dr. Charles P. Ewing served as action editor for this article.

The authors wish to thank C. Piotrowski for his review and helpful comments on this manuscript.

understanding of frequently represented adverse social contexts, neurological deficits, substance abuse patterns, trauma experiences, and mental health problems in this population.

In addition, reasoned court and legislative considerations regarding the self-representation competency of death row inmates require empirical data on the intellectual, academic and psychological capabilities of this unique population. Furthermore, avoidance of discrimination in the application of the death penalty requires sound demographic data regarding who receives this sentence. Adequate planning and review of mental health services for death row inmates rests largely on data regarding the nature and incidence of psychological disorders among this population. Finally, prison policies regarding death row confinement that are informed by research are more likely to result in effective management and utilization of resources.

Despite the criminal justice and forensic mental health agendas that would be facilitated by a sound research base, the literature on death row inmates has not been comprehensively summarized and reviewed. This article attempts to fill that void by reviewing the extant literature on the characteristics of death row inmates, their adjustment to prison, and their conditions of confinement.

STRENGTHS AND WEAKNESSES OF THE EXTANT RESEARCH

Research on death row inmates comprises three broad types of study. Demographic data have been collected by governmental agencies such as the Bureau of Justice Statistics, concerned social organizations such as the NAACP, academicians, and death penalty historians. These demographic data are reliable, national in scope, and descriptive of trends among this population. What this type of information gains in breadth, however, it loses in detail. For example, national demographics provide important data on age, gender, ethnicity, years on death row, marital status, and number of years of schooling completed, but sparse information on intelligence, functional literacy, psychological or neurological disorders, or dysfunctional family history.

More specific detail has been provided by the 13 'clinical' studies of death row inmates conducted over the past 35 years. These studies have undertaken individual appraisals of death row inmates through file reviews and/or direct assessment. This database is summarized in Table 1. The clinical studies provide a foundation of descriptive detail regarding the frequency of deficiencies, disorders, and dysfunctional histories of death row inmates not available from demographic summaries. In this regard, they are critically important in forensic evaluation and public policy issues involving death row populations.

Most of this clinical research, however, is compromised by sampling, methodological, and reporting limitations. As inspection of Table 1 reflects, four of the 13 clinical studies were performed on death row inmates from a single state, North Carolina, and most of the studies examined death row inmates in southern states. Sample sizes have been modest, ranging from eight to 83 participants. Participant selection procedures were particularly problematic in two of the clinical studies. Lewis, Pincus, Feldman, Jackson, and Bard (1986) described their evaluation of

Table 1. Clinical Studies of Death Row Inmates

Study	State	Sample	IQ Score	Education	Psychological Symptoms	Neurological Findings	History
Bluestone & McGhee (1962)	NY	N = 19	37% ≤ IQ 79 74% ≤ IQ 89 M = IQ 95.6 (beta) IQ range = 76-118	63% < 6th grade 100% < h.s. grad M = 9.5 (schooling) Range = 6-12th M = 5.6 (achievement) Range = 1.9-8th	32% delusional Pervasive maladaptive defenses 37% poor death row adjustment All elevated MMPI depression scale		95% father absent Most reared in foster/institu. All poverty/psych. Problems in family Half not reared by both par. 87% heavy EtOH abuse
Panton (1976)	NC	N = 34	M = IQ 90.7 IQ range = 74-125	M = 9.4 (schooling) Range = 4-14	Higher MMPI Pa and Sc scales than general population inmates		
Panton (1978)	NC	N = 55	M = IQ 96.5 (SD = 12.2)	M = 9.8 (SD = 2.2)	Higher MMPI Pa and Sc scales Symptoms subsided if commuted		
Lewis (1979)	FL	N = 83	Reported as similar to community distribution	M = 9.7 (schooling) 9.6% < 6th grade	41% diagnosed psych. disorder		42% not reared by both par. 81% intoxicated at offense
Johnson (1979)	AL	N = 35			Pervasive depression, mood lability, reduced mental acuity		
Smith & Felix (1986)	NC	N = 34	Estimated average IQ from brief mental status	58% < h.s. grad Range = 9-12th	Use of denial, suppression, undoing		Divorce & separation freq. Unsupportive families freq.
Lewis <i>et al.</i> (1986)	5 states	N = 15	M = 86.5 (WAIS-R) IQ range = 50-100	1-12th (achievement) All had islands of poor literacy	40% chronic psychosis 20% episodic psychosis 13% bi-polar	33% major impairments 47% minor neuro. signs 100% had head injuries	60% child/adol. psych. dis. 27% attempted suicide in child/adolescence
Lewis <i>et al.</i> (1988) (<18 years at offense)	4 states	N = 14	M = 83.9 (WAIS-R) SD = 14.3 IQ range = 64-121	M = 7.6 reading comp. M = 6.2 concept form. W-J range = 1-19.9	50% current or past psychosis 29% severe mood disorders 21% periodic paranoia	64% maj. neuro. abnorm. 57% head injury req. hosp. and/or indenting cranium	86% phys. abused 36% sex abuse by male rel. Fam. viol./EtOH depend. freq.
Evans (1997)		N = 11				82% had abnormal EEG & neuropsych. testing	
Frierson <i>et al.</i> (1998)	SC	N = 18	M = IQ 90.3 IQ range = 50-122 28% ≤ borderline or MR			24% LOC head injury Half had abnormal EEG, MRI, neurological exam	78% sub. abuse disorder Half intoxicated at offense
Cunningham & Vigen (1999)	MS	N = 39	M = VIQ 81.5 (WAIS-R) SD = 10.7 IQ range = 58-103 27% ≤ IQ 74	M = 9th (schooling) SD = 2.3 M = 5.1 reading comp. SD = 2.87 WIAT range = 1.2-12+	50% mod.-extreme depress. (R-BDI) 71% mult. PAI scale elevations > T70 43% reported depression 30% reported anxiety 5% psychotic	46% neurological insults	57% sub. abusing parent 73% sub. abuse/depend.
Freedman & Hemenway (2000)	CA	N = 16	69% ≤ borderline or MR	38% illiterate	56% psychosis with hallucinations 81% severe depression 88% post-traumatic stress disorder	12 traumatic brain injury 12 devel. or cog. impaired 3 fetal EtOH syn./effects	81% polysub. abusers 88% abused phys./sex. 94% wit. family violence 94% institutional failure

only 15 death row inmates, a relatively small fraction of inmates relative to the death row populations of five states from which their participants were drawn. While Lewis *et al.* asserted that the selection criterion was principally the imminence of execution, the high rate of pre-offense psychiatric treatment and psychotic symptoms among this sample raise concerns regarding whether they are representative of the larger death row population. Also reflecting potential selection bias, Frierson, Schwartz-Watts, Morgan, and Malone (1998) utilized retrospective records review of death row inmates who had been referred for pre-trial evaluation of competency to stand trial and/or criminal responsibility. Only a third of the inmates on South Carolina's death row had been referred for such pre-trial evaluations. Arguably, inmates referred for such pre-trial evaluation of competency to stand trial or criminal responsibility represent a distinct subgroup of death row inmates.

Understandably in research efforts spanning over 35 years, clinical investigations have employed varying clinical assessment measures—making comparisons and generalizations somewhat difficult. More problematic, 'operational definitions' of specified deficiencies have been critically absent from a number of studies. In a related vein, the assessment techniques and subsequent results have been inadequately specified or reported in several of the studies.

A third basis of research data on death row inmates is derived from inmate institutional files and/or statistical analysis of violent prison disciplinary infractions. These data provide information on the rate of prison violence within death row or former death row inmate groups. Such group data are fundamental to estimates of the probability of future violence in these groups—and, thus, quite relevant to institutional security policies regarding death row inmates (see Cunningham & Reidy, 1998, for applications of group data to violence risk assessment in capital sentencing). The principal limitation of this type of research is that only three published studies have reported data on the incidence of assaults among death row inmates (Marquart, Ekland-Olson, & Sorensen, 1994; Reidy, Cunningham, & Sorensen, 2001; Sorensen & Wrinkle, 1996). Additionally, wide variations in death row incarceration conditions and policies may present difficulty in generalizing from one state to another. For example, particularly draconian conditions of incarceration may increase rather than decrease inmate violence as inmate frustration is increased and incentives for cooperative behavior are, for the most part, unavailable.

BROAD DEMOGRAPHICS

Demographic data on death row is continually evolving in response to new sentences, relief and removal from death row, and executions. The most frequently updated death row statistics of well respected reliability are maintained by the NAACP Legal Defense Fund, in a quarterly release: *Death Row U.S.A.* According to this statistical summary, as of January 1, 2002 there were 3,711 inmates on death row, representing 39 jurisdictions¹ (i.e. 37 states, federal, military). Males comprised 98.54% of this population. States with the largest death row populations were California (607), Texas (455), Florida (386), Pennsylvania (247), and North Carolina (226).

¹New Hampshire has a death penalty statute but no sentences currently imposed.

The Bureau of Justice Statistics, U.S. Department of Justice, as part of the National Prisoner Statistics Program, collects somewhat less current, but more detailed annual statistical descriptions regarding death penalty inmates, sentencing, and dispositions in the United States. According to the most recent of these summaries (Snell, 2001), the 3,593 inmates on death row as of December 31, 2000 were the remnant of 6,588 defendants who were sentenced to death from 1977–2000. Of these, 10% were executed, 3% died by causes other than execution, and 32% received other dispositions. Median time on death row at the end of 2000 was 8 years. The 85 death row inmates that were executed in 2000 had averaged 11.42 years between sentence and execution. That same year, 58 inmates had their death sentences overturned or removed, and 18 death row inmates died of natural causes.

Death row inmates in 2000 ranged in age from 18 to 85 years old, with a median age range of 35 to 39 years (19.1% of the total sample). Just over half of death row inmates had never married. Sixty-four percent had prior felony convictions and 39% were involved with the criminal justice system in some capacity at the time of the capital offense. Prior homicide convictions were present in the criminal records of 8.1%. Median age at time of capital arrest was 27 years—with 40% age 24 or younger, 10.7% age 18–19, and 2.4% age 17 or younger.

HISTORICAL DEMOGRAPHIC DATA

Historical data regarding the death penalty in America has been summarized elsewhere. Espy and Smykla (1994) have attempted to document every lawful execution in the United States and its predecessor colonies and territories from 1608 to 1987. Bedau (1982) provided an extensive analysis of statistical data, legal evolutions, and cultural perspectives on the death penalty across this century, with discussion of demographics associated with the application of capital punishment. Marquart and Sorensen (1989) described demographic characteristics of death row inmates at the time of the *Furman* decision in 1972. Marquart *et al.* (1994) detailed both individual histories and group demographic data in a text that traces the history of death row in Texas from 1923 to 1990. These historical reviews are similar in providing a broad brush overview and limited anecdotal information, but provide no systematic description of psychological, neurological, or cognitive deficits among this population. Research on offense characteristics and offender/victim demographics associated with a higher likelihood of a death sentence has also been summarized (Baldus, Pulaski, & Woodworth, 1983; Baldus, Woodworth, & Pulaski, 1990; Bedau, 1982; Bowers, 1983; Death Penalty Information Center, 1998; Farr, 1997; Johnson, Farrell, & Sapp, 1997; Marquart, Ekland-Olson, & Sorensen, 1994; McAdams, 1998).

ETHNIC DISTRIBUTION

Ethnic distribution of death row as of January 1, 2002 was white 45.57%, African–American 42.98%, Latino/Latina 9.27%, Native American 1.08%, and Asian 1.08% (NAACP Legal Defense Fund, 2002). African–Americans are markedly over-represented on death row compared with their percentage of the population 42.72% versus 12.3%). Greenberg (1997), however, has argued that the critical

ratio is not African-Americans on death row relative to their percentage of population. Rather, Greenberg asserted that a more meaningful ratio is African-Americans on death row as a percentage of homicides perpetrated by African-Americans. For example, among murders and non-negligent homicides in 1997 known to the police where the race of the offender could be determined, 51.3% were perpetrated by African-Americans (Maguire & Pastore, 1999).

This consideration, though, has not been exhaustively explanatory. First, it does not account for jurisdictions where ratios of death sentences imposed on African-American defendants are in excess of their proportion of homicides. To illustrate, while the national ratio of African-Americans on death row relative to percentage of population is of 3.5:1, in some jurisdictions the ratio is far higher: Utah, 29:1; Pennsylvania, 7:1; Nebraska and Colorado, 6:1; Washington, California, Ohio, and Connecticut, 5:1 (Johnson *et al.*, 1997). Seventeen of 20 inmates (85%) on federal death row are African-American or Latino (Death Penalty Information Center, June 4, 2001). Second, the probability of receiving a death sentence appears to be significantly affected by the race of the victim as well as the race of the defendant (Baldus *et al.*, 1990). Indeed, the Death Penalty Information Center (June, 1998) reviewed the research regarding the relationship between race and the death penalty, concluding that in 96% of the studies a pattern of race-of-victim and/or race-of-defendant discrimination was revealed.

WOMEN ON DEATH ROW

Research on female death row inmates is modestly more detailed than simple demographic description, but has not been characterized by comprehensive clinical evaluation. Strieb (2001a) has collated and summarized data regarding female death row inmates from a historical perspective, as well as providing quarterly updates of female death penalty sentencing and imposition. Strieb reported that 2.8% (561/20,000) of the individuals executed in the United States since 1608 have been females, with over half of these executed in the South Census Region. As of December 31, 2000 there had been 45 executions of women in the U.S. since 1900, only 0.56% (45/8,010) of the total executed across this century. During the modern era (post *Furman v. Georgia*, 1972), 137 females have been sentenced to death, representing 23 state jurisdictions. Only five of these women (0.6%) have been among the 683 capital offenders executed in the U.S. since 1973. Of the total of 137 females sentenced to death since 1973, only 53 remained on death row at the close of 2000. The racial distribution of the female death row population is White 55%, African-American 32%, and Latina 11%. These women range in age from 21 to 71 with a median (40%) age range of 30–39. Their tenures on death row range from less than a year to over 19 years.

Women are under-represented on death row, even in relationship to their rate of arrest for murder. Strieb (2001a) reported that women account for 13% of murder arrests, but only 1.9% of death sentences imposed at trial. It is unknown what percentage of murders committed by females would meet the criteria for capital murder prosecution. Execution rates are also gender discrepant. While 9% of males sentenced to death since 1973 have been executed, only 3.6% of females have had their death sentences carried out.

Streib (1992) described that approximately one-third of the women remaining on death row killed either a husband or lover, and another third killed in concert with or at the direction of a husband or lover. Streib hypothesized that the capital offenses of many of these women were a product of being battered victims in this primary relationship (i.e., killed the batterer, or killed in concert with or to please the batterer). Unfortunately, Streib deviated from the statistical rigor of his historical analysis of females on death row, and provided only anecdotal description of four battered females who were sentenced to death in support of what seems to be an over-reaching assertion.

Rapaport (1990) provided brief anecdotal offense histories and categorization of motive for the 30 women executed in the U.S. between 1930 and 1967, and the 39 women sentenced to death between 1978 and 1987. Unfortunately, no summary demographic or psychosocial information was provided. In a similar vein, Farr (1997) focused on the offense and victim characteristics of a nationwide sample of 35 female inmates on death row in 1993. The racial distribution of these female inmates was virtually identical to that of male inmates on death row (43% non-white), as was the geographic region of conviction.

The capital murders committed by these female death row inmates have been predominantly intra-racial. In almost half of the cases, their murders involved significant others—a much larger proportion than their male death row counterparts. This finding is consistent with gender comparisons of offender–victim relationship among homicide and violent offenders in the general prison population (Snell, 1994). Farr (1997) classified capital offenses not only by the level of aggravation (Barnett, 1985), but also by the various ‘representations of female evil’ employed in the prosecutorial/media characterizations of these women. By Farr’s analysis, these included Black Widows (8.6%), Cold Calculators (28.6%), Depraved Partners (14.3%), Accommodating Partners (8.6%), Explosive Avengers (28.6%), and Robber–Predators (11.4%). Psychosocial description was limited to an observation that the female death row inmates typically do not have long criminal histories. Regrettably, no intellectual, educational, neurological, or psychological descriptions were reported.

O’Shea (1999) examined the history of women and the death penalty in the United States from 1990 to 1998. O’Shea’s text summarized the death penalty statutes of 30 states that have sentenced women to death since 1900, discussed the individual histories of these female capital offenders, and explored sociopolitical perspectives regarding capital punishment. While offering a comprehensive overview and individual anecdotal detail on the modern application of capital punishment to female offenders, the text does not report intellectual, educational, neurological, or psychological data and there is no analysis of demographic characteristics.

JUVENILE OFFENDERS ON DEATH ROW

The death sentencing of juvenile offenders² has been relatively settled as a constitutional issue in the aftermath of *Thompson v. Oklahoma* (1988) and *Stanford*

²For purposes of classification in capital litigation and scholarly literature, juvenile offenders are defined as those who were less than age 18 at the time of their capital crimes.

v. Kentucky (1989). Significant international concern with the application of the death penalty to juvenile offenders continues, however, with the United States being the only country that currently allows juvenile offenders to be sentenced to death. Sixty percent (24) of the American jurisdictions authorizing the death penalty allow for this sanction to be applied to juvenile offenders. Offenders who were age 17 at offense are eligible for the death penalty in five jurisdictions, while age 16 at capital offense has been established as the minimum eligibility age in 19 jurisdictions (Strieb, 2001b).

The most comprehensive source of information regarding juvenile offenders on death row has been compiled and regularly updated by Strieb (2001b). Strieb estimates that while data regarding the execution of juvenile offenders since 1973 is complete, information on the annual death sentencing of juvenile offenders in recent years and juvenile offenders currently on death row may represent an under-report. This lack of definitive statistics is a result of the unavailability of accurate date of birth information for some offenders, difficulty in fully accounting for offenders who have been sentenced to death but not yet transported to death row, inmates whose death sentences have been reversed but are still physically housed on death row, and inmates who are witnesses or codefendants in other proceedings and temporarily housed in other facilities.

With these caveats noted, Strieb (2001b) reported that 200 juvenile offenders, including four females, have been sentenced to death since 1973—representing less than 3% of all age offenders receiving death sentences. Half of these death sentences have been handed down in three states: Texas (50), Florida (30), and Alabama (21). Approximately 70% of juvenile offender death sentences were imposed on individuals who were 17 at the time of the capital offense. Seventeen (8%) have subsequently been executed, while 110 (54%) had their death sentences reversed. Of the 17 juvenile offenders executed, all were males and all but one had been 17 at the time of the capital offense.

Seventy-five (37%) of the 200 juvenile offenders sentenced to death remain on death row. All are males. Twenty-six (35%) are on death row in Texas. Offenders of racial minority origin are more heavily represented on death row among juvenile offenders than adult offenders (66% versus 54%). Tenure among juvenile offenders on death row ranges from less than one year to over 22 years, and their current age range is 18–42 years (Strieb, 2001b). Eighty percent of the 101 victims of these juvenile offenders were adults, two-thirds were white, and half were females (Death Penalty Information Center, 2001).

A single clinical study has specifically examined juvenile offenders on death row (Lewis *et al.*, 1988). While the sample was rather small ($N=14$), this number represented 38% of the 37 juvenile offenders then on death row. For each of the offenders studied, Lewis and colleagues detailed descriptive findings of head injuries, neurological dysfunction, psychiatric symptoms, neuropsychiatric and psychoeducational scores, and any family history of physical abuse, sexual abuse, family violence, and/or family psychiatric illness. A pattern of multiple significant vulnerabilities was demonstrated among most of these offenders.

Unfortunately, this study has a number of weaknesses. The selection criteria for the 14 subjects is specified as all of the juveniles sentenced to death in four states. The states represented are not specified, even by region, nor is there discussion regarding how these states were chosen. More problematically, the results of at least

six tests described as administered during the course of the study were not subsequently reported, and only portions of other testing were detailed. The test findings that were reported were not subjected to even simple descriptive statistical analysis (though we analyzed some findings for the purposes of Table 1).

INTELLECTUAL ABILITY

Eleven of the 13 clinical studies reported data on the intellectual capability of death row samples. Mean IQ scores were in the average to low average range, generally consistent with the intellectual capabilities of general prison population inmates (Panton, 1976). A significant minority of death row inmates, though, exhibited marked intellectual limitations. For example, 27% of the Mississippi death row sample investigated by Cunningham and Vigen (1999) had WAIS-R Verbal IQ scores below 74. At a standard error of measurement 95% confidence interval, IQ scores of 74 or below may fall in the 'mentally retarded' range of intellectual functioning. Similarly, Frierson *et al.* (1998) reported that 28% of their death row sample obtained IQ scores in the borderline or mentally retarded classifications. Freedman and Hemenway (2000) did not report specific IQ data, but described that two-thirds of their small sample were mentally retarded or had borderline intellectual functioning as assessed by 'neuropsychiatric and neurological testing.' It is unclear why this latter finding is twice the rate of earlier studies, though the absence of any report of formal intellectual testing is troublesome. Demographic research based on case review findings of Keyes, Edwards, and Perske (1997) (updated by the Death Penalty Information Center) identified 34 executed inmates as having had IQ scores that fell in the mild mental retardation range.

There is a spectrum in the methodological adequacy of the intellectual assessments reported by these 13 studies. Smith and Felix (1986) estimated that their sample was of average intelligence based only on a brief mental status examination—an inadequate and unstandardized assessment. Three others (Bluestone & McGahee, 1962; Freedman & Hemenway, 2000; Lewis, 1979) provided no information regarding the range or mean IQ scores obtained by their samples. Most of the clinical studies did not identify the IQ measure employed in determining reported IQ scores.

EDUCATIONAL ACHIEVEMENT

National demographic data (Snell, 2001) indicate that 52.3% of death row inmates did not finish high school and 12.7% attended only to the eighth grade or less. Median formal education was 11th grade. These rates of educational attainment are similar to or only modestly lower than those observed in the general state prison population nationwide, where 14.2% attended to eighth grade or less and 41.1% did not finish high school, with a 12th grade median education (Harlow, 1994).

Clinical studies on death row inmates found a somewhat lower level of formal education, typically reporting a mean of ninth grade schooling. This discrepancy may be a function of early school dropouts having a greater impact on the mean than median score. More importantly, the clinical studies demonstrate that educational

achievement or functional literacy levels are well below what would be expected from reported years of schooling. For example Gallemore and Panton (1972) reported mean school attendance at the 9.5 grade level, but mean educational achievement capabilities of only the 5.6 grade. Similarly, Cunningham and Vigen (1999) reported mean schooling to 9.5 grade, while mean WIAT reading comprehension scores were at a 5.1 grade level. The etiology of this discrepancy between years of formal education and level of functional literacy is difficult to determine from the limited data. Certainly the trend appears broader than the 13.6% rate of participation in special education services reported by Cunningham and Vigen.

PSYCHOLOGICAL DISORDERS

Eleven of the 13 clinical studies investigated psychological functioning among the death row inmates. All 11 reported a high incidence of psychological symptoms and disorders, ranging from maladaptive defenses to pervasive depression, mood lability, and diminished mental acuity to episodic and chronic psychosis. The incidence of marked psychological disorder reported in these studies is well in excess of that observed in the U.S. general population. Robins and Regier (1991) estimated that .6% of American males and .8% of females suffer from a psychotic disorder at some point in their lives, and 14.7% of males and 23.9% of females will suffer from a major affective disorder.

Death row inmates appear to have a disproportionate rate of serious psychological disorders relative to a general prison population, though this determination is complicated by lack of direct comparability of measures and by rates mental illness among incarcerated populations that are twice that of the general community (Steadman, Fabisiak, Dvoskin, & Holohean, 1989; Teplin, 1990). For example, Ditton (1999) estimated that 16.2% of state prison inmates nationwide are mentally ill.

The rates of mental illness reported in death row samples are broadly consistent with those observed in the few studies examining psychological disorders among murder defendants. Yarvis (1990) reported that 86% of his sample of 100 murder defendants suffered from a DSM-III Axis I disorder, including 21% who were schizophrenic and 8% who exhibited an affective psychosis—a rate of psychopathology substantially higher than that observed in a general prison population (Yarvis, 1994). Blake, Pincus, and Buckner (1995) in their sample of 31 murder defendants awaiting trial identified 26% as schizophrenic, 39% as suffering from affective disorders, and 100% as exhibiting paranoid symptoms.

While the substantial incidence of psychologically distressing symptoms and frank psychological disorders among death row inmates is a consistent and reliable finding across studies, the wide variation in the most severe symptomatology among the studies is troublesome. For example, Cunningham and Vigen (1999) reported that 5% of their sample demonstrated psychotic disorders. Bluestone and McGahee (1962) identified 32% of their sample as delusional. Freedman and Hemenway (2000) reported that 56% of their sample had a history of psychosis, while Lewis *et al.* (1986) reported a 60% incidence of psychosis—twice the rate reported by Bluestone and McGahee and 12 times the rate reported by Cunningham and Vigen. We acknowledge that the Mississippi sample may have underestimated the

incidence of psychosis on death row in that most of the eight death row inmates who did not participate appeared psychotically disorganized. Even if all eight were psychotic, however, the incidence of psychosis in the Mississippi sample would be only a third of that reported by Freedman and Hemenway or Lewis and colleagues.

A second hypothesis for the discrepancy in rates of psychosis among these samples is the under-identification of psychotic symptoms. Lewis *et al.* (1986) described that none of the psychotic inmates in their sample were flamboyantly schizophrenic, and all tended to minimize their symptoms. These investigators performed extensive psychiatric and medical records review, as well as interviews of family in making their diagnosis. Freedman and Hemenway (2000) also relied on comprehensive review of records and third party interviews. By comparison, Cunningham and Vigen (1999) did not utilize these additional procedures. Data from psychological testing of death row inmates provide some support for the hypothesis that psychotic processes may go undetected among death row inmates. Pantan (1976, 1978) reported that death row inmates had elevated Pa and Sc scales on the MMPI. Cunningham and Vigen, utilizing the Personality Assessment Inventory (PAI), found that 32.1% and 21.4% of their sample scored in excess of the 98th percentile on the Paranoia and Schizophrenia scales of the PAI respectively.

A third explanation for the high incidence of psychosis among their participants identified by two of the studies would involve sampling bias from the evaluation referral procedure.

NEUROLOGICAL DISORDERS AND NEUROPSYCHOLOGICAL DEFICITS

Six of the 13 clinical studies investigated neurologically significant histories and/or signs in their death row samples. Again, the research is limited but supports the general observation that neurological abnormalities and neuropsychological deficits are frequently observed among death row inmates. These findings are consistent with studies of murderers and violent felons reporting a disproportionate incidence of neurological dysfunction and abnormalities among these offenders (Blake *et al.*, 1995; Langevin, Ben-Aron, Wortzman, Dickey, & Handy, 1987; Martell, 1992).

SUBSTANCE ABUSE AND INTOXICATION AT CAPITAL OFFENSE

Substance abuse/dependence is clearly implicated in the histories and capital offenses of a significant proportion of death row inmates. Specifically, five of the clinical studies inquired about the substance abuse histories of their samples. A sizeable percentage of the death row participants in these studies self-reported histories of substance abuse/dependence in the community, and many were under the influence of alcohol and/or drugs at the time of their capital offenses—a finding consistent with research on substance abuse among incarcerated homicide offenders (Beck *et al.*, 1993; Blake *et al.*, 1995; Greenfeld, 1998; Tiihonen, Eronen, & Hakola, 1993; Yarvis, 1990, 1994).

DYSFUNCTIONAL FAMILY HISTORY

Many if not most death row inmates have histories of paternal abandonment, foster care and institutionalization, abuse and neglect, and/or parental substance abuse. This observation is supported by the findings of seven of the clinical studies, though this tended to be expressed as summary data that are not readily quantified. The presence of pathological family interactions in the histories of capital murderers is consistent with an extensive body of research demonstrating the role of disrupted attachment and disturbed family relationships in the etiology of violence (American Psychological Association, 1996; Blake *et al.*, 1995; Hawkins *et al.*, 2000; Kelley, Thornberry, & Smith, 1997; Patterson, DeBaryshe, & Ramsey, 1989; Ressler, Burgess, & Douglas, 1988; Widom, 1989a, 1989b, 2000; Widom & Ames, 1994).

SELF-REPRESENTATION CAPABILITY

Mello (1988) asserted that death row inmates were not competent to represent themselves in state postconviction proceedings, relying on previous general studies of death row inmates and other state prisoners, and on anecdotal case examples (see McDermott, 1990, for review of constitution analysis). A single study (Cunningham & Vigen, 1999) empirically examined these capabilities in death row inmates. This study was prompted by repeated holdings of the Mississippi Supreme Court that there was no right to state funded counsel for indigent death row inmates at this phase of the appellate review. Evaluation of Mississippi death row inmates demonstrated verbal IQ scores far below the average of attorneys, reading comprehension inadequate for the complexity of relevant statutes and case law, disturbed psychological functioning, poor legal aptitude, and inadequate specific legal knowledge. Cunningham and Vigen concluded that these death row inmates did not have the intellectual capability, academic skills, psychological resources, or legal knowledge to function as their own counsels in seeking habeas relief. Shortly after the findings of this study were filed with the Mississippi Supreme Court, that Court reversed its longstanding ruling, found that death row inmates did not have the capability to represent themselves in state postconviction proceedings, and instructed the legislature to draft a funding mechanism. Given the findings of general research on death row inmates, there is reason to believe that the conclusions of Cunningham and Vigen extend to death row inmates in other states.

VIOLENCE ON DEATH ROW

Marquart *et al.* (1994) analyzed the incidence of assaultive acts of Texas death row inmates across a 15-year period from 1974 to 1988, tracking 421 inmates who passed through death row. Assaults on other inmates and/or correctional staff were committed by only 10.7% of these death row inmates, for a total of 63 assaultive acts during the entire 15-year period. Two inmates (less than half of one percent) killed other death row inmates. The authors summarized:

The majority of inmates awaiting execution on death row have served their time without major incident. Many of them work in the garment factory with objects that might serve as weapons close at hand and yet do not commit any violent assaultive acts (p. 181).

The 10.7% cumulative incidence of assault among death row inmates is equivalent to the rate of aggravated/weapons assaults of life sentenced murderers and rapists followed across an 11-year period in the Texas general prison population (Marquart *et al.*, 1994). Marquart *et al.* (1989) reported that the Texas general prison population in 1986 averaged 11.66 serious violent rule infraction acts toward other inmates or staff per 100 inmates that year alone. By additional comparison, rates of assault on inmates and staff in state and federal prisons range from 0.02 to 0.045 annually (Reidy *et al.*, 2001).

An expectation then that death row inmates will invariably commit assaults in prison because they have 'nothing to lose' appears to be unfounded. Comparative research on death row inmates with inmates eligible for eventual parole is consistent with the findings of Marquart *et al.* (1994). Specifically, Sorensen and Wrinkle (1996) found that 80% of Missouri murderers committed no acts of violence across 15 years of prison follow-up regardless of whether they were sentenced to death, life-with-parole, or life-without-parole. Twenty-nine percent of the assaults that did occur were classified as minor. The cumulative 15-year prevalence rate of inmate-on-inmate murder/manslaughter was 1.2%, and again did not significantly differ for the three groups. Institutional homicidal violence characterizes a very small fraction of the death row population (.012) (Sorensen & Wrinkle, 1996) and incarcerated murderers (.002) (Sorensen & Pilgrim, 2000), though these rates are higher than those observed in the general inmate population.

There is additional support for the hypothesis that the majority of death row inmates do not exhibit serious violence within the structured context of institutional confinement (Cunningham & Reidy, 1998). Briefly, a number of studies have followed the violence rates of former death row inmates in the general prison population after their death sentences were vacated by commutation or other relief. The findings of these studies are remarkably consistent, even across varying historical periods and jurisdictions: 55 New Jersey inmates removed from death row between 1907 and 1960 (Bedau, 1964), 100 Texas inmates removed from death row between 1923 and 1972 (Marquart *et al.*, 1994), 47 Texas death row inmates commuted in 1972 as a result of *Furman v. Georgia* (Marquart *et al.*, 1994; Marquart & Sorensen, 1988), 533 death row inmates nationwide commuted under *Furman* (Marquart & Sorensen, 1989), 92 Texas inmates removed from death row between 1976 and 1986 (Marquart *et al.*, 1989), and 39 Indiana death row inmates removed from death row between 1972 and 1999 (Reidy *et al.*, 2001).

There are several hypotheses that may account for why death row inmates typically do not perpetrate violence in prison despite their pending sentences of death. For some, the violent offense of conviction occurred in a particular context or at a developmental stage that is not replicated in prison (Cunningham & Reidy, 1999). Second, most death row inmates are engaged in direct appeals or post-conviction reviews of their death sentences, seeking sentence commutation or new trials. As the outcome of subsequent petitions and litigation might be influenced by death row misconduct, inmates do have something to lose should they exhibit a pattern of recurrent institutional violence. Third, there is evidence that most death

row inmates are influenced by the same incentives and consequences as general population inmates (Lombardi, Sluder, & Wallace, 1997; Marquart *et al.*, 1994). When programming opportunities and privileges are available for good behavior, misconduct results in the loss of these simple but significant advantages. This final consideration is particularly salient in light of the death row confinement policies detailed below.

DEATH ROW CONDITIONS OF CONFINEMENT

Corrections Compendium ('Death Row,' 1999) summarized data from a recent survey of 37 state and federal corrections departments. This report detailed death row policies regarding accommodations, time outside cell per day, inmate mingling, visitation, programming and other issues. Specifically, in 35 jurisdictions death row inmates are housed in individual cells. In 18 jurisdictions these death row inmates average less than an hour daily of activity outside of their cells, and in five other jurisdictions out-of-cell time is less than three hours daily. Social visitation is non-contact in 21 of 37 jurisdictions. Thus, while there is some variability in policy from state to state, death row conditions nationally are characterized by 'rigid security, isolation, limited movement, and austere conditions' (Lombardi *et al.*, 1997, p. 3). Not surprisingly, there is evidence that these bleak confinement conditions impact the psychological adjustment of death row inmates—most of whom spend many years in this status.

Johnson (1979) conducted in-depth interviews with 35 of 37 inmates on Alabama's death row, evaluating how coping efforts were sustained or impaired by death row confinement. Principal stresses included pending sentences of death; an environment of deprivation that was cramped, malodorous, and confining; arbitrary rules; daily frustrations; staff harassment; family alienation; and isolation. Johnson identified four adverse psychological processes as pervading the experience of death row inmates:

1. a sense of helplessness and defeat;
2. a sense of widespread and diffuse danger with an accompanying perception of helpless vulnerability;
3. emotional emptiness characterized by loneliness and a deadening of feelings for self and others; and
4. a decline in mental and physical acuity.

Johnson described the death row inmates as experiencing chronically unstable, fluctuating moods and recurrent depression. Deterioration of mental capabilities was common as inmates spoke of mental slowness, confusion, forgetfulness, lethargy, listlessness, and drowsiness. Johnson compared this deterioration to senility, describing the death row inmates as writing rambling correspondence, misplacing objects within a small cell, and expressing disconnected thoughts. Johnson concluded 'The stresses of death row confinement are enormous. Adjustment proves, at best, precarious and fragile' (p. 179).

Similarly, Lewis (1979) concluded that the environmental conditions on Florida's death row were not conducive to concentration or psychological adjustment. High levels of noise, 6' × 9' cells, severely limited exercise, and sharply curtailed social opportunities were identified as undermining inmate attempts at coping.

Death row prison conditions have been contested in litigation. These suits have typically met with minimal intervention by state and federal courts (Yuzon, 1996). Two exceptions to this judicial trend are notable. Marquart *et al.* (1994) described a consent decree regarding the Texas death row, signed in conjunction with *Ruiz v. Estelle* in 1985, that fundamentally modified the conditions on the Texas death row. Prior to the consent decree, the daily activity of inmates on death row reflected the 'dominance of security' (p. 138), characterized by 20+ hours daily of cell confinement, meals in cells, strict custody procedures, and restraints in out-of-cell movement. Following the consent decree these procedures were only applied to death row 'segregation' inmates. Approximately one-third of death row inmates were classified as work capable, placed in two man cells without wire mesh, not handcuffed, and fed buffet style from steam tables so that they could choose to eat in their cells or in a common area. Marquart *et al.* reported that the work-capable inmates took showers in the general prison population bathhouse and were 'permitted to be out of their cells for 14 hours a day on weekdays and 10 hours a day on weekends' (p. 139). A portion of these inmates worked as orderlies and janitors on the cellblock, but most worked in a garment factory. The work-capable death row inmates preferred the work program to the alternative of being locked down 20+ hours per day. Marquart *et al.* noted

The garment factory and work capable wings are clean and quiet, especially in comparison with the noise levels of the segregation wings. The prisoners seem to have much better attitudes, and the overall quality of cellblock life is higher. There is certainly less stress. Since the inception of the program, no serious violent incidents (e.g., stabbings, hostage situations, melees) have occurred in the living and work areas. The garment factory supervisor stated that disciplinary infractions are rare—less than one a month—and he recalled only one fistfight (pp. 140–141).

Unfortunately, in response to an escape attempt from the Texas death row, other isolated serious misconduct, and the expiration of the consent decree, the above death row work program on Texas death row was terminated, death row was moved to a newer facility, and an administrative segregation (super-max) protocol was re-imposed for virtually all death row inmates. Thus, despite the successes of the work program and stratified response to confinement restrictions, Texas appears to have returned to the dominance of security model present before the consent decree.

Responses by the Missouri Department of Corrections to death row class action litigation have been even farther reaching (Lombardi *et al.*, 1997). In 1991, the Missouri DOC began mainstreaming some 'capital punishment' (CP) inmates into the general population of Potosi Correctional Center at Mineral Point, where the majority of inmates are facing sentences of 50 years or life-without-parole. The capital and non-capital inmates at this facility had committed similar offenses—differing mainly in their respective sentences. Lombardi *et al.* described the six-year tenure of mainstreaming CP inmates as resulting in cost savings, more efficient staff utilization, expanded commissary/canteen hours for all inmates, improved access of CP inmates to legal materials and assistance, improved access of CP inmates to health care and psychological services, integration of CP inmates into prison work activities, increased visitation access for the families of CP inmates, increased access of CP inmates to recreational opportunities, and reduced stigmatization of CP inmates. Lombardi *et al.* concluded that integration of CP inmates

with non-capital inmates can be a 'viable, effective approach' (p. 10) to death row confinement.

CONCLUSIONS

While much of the research on death row inmates has limitations in specificity, sampling, methodology, and reporting, there are a number of recurrent findings. To summarize these, death row inmates are overwhelmingly male and disproportionately Southern. Over half of death row inmates are non-whites. A majority did not graduate from high school. Mean IQ scores of death row inmates are in the low-average-to-average range, but a disturbingly large minority exhibits IQ scores in the borderline and mental retardation ranges. Functional literacy capabilities are well below what would be expected from the years of schooling attended. Whether these literacy deficits are the result of learning disabilities or other factors cannot be determined from the current data. There is also a significant incidence of neurological and neuropsychological abnormalities among death row inmates.

Psychological disorders are quite frequent among death row inmates. The particularly adverse conditions of death row confinement in some jurisdictions appear to not only undermine efforts to adaptively cope, but also act to aggravate psychological symptoms. Current prison mental health interventions are insufficient.

Pre-confinement histories of disturbed families of origin, parental alcoholism, childhood abuse and neglect, and/or personal substance dependence are disturbingly common. A sizeable percentage of death row inmates reported pre-confinement substance dependence and/or were under the influence of alcohol or drugs at the time of the capital offense. Incarcerated homicide offenders have self-reported similar substance abuse patterns.

These findings regarding death row inmates have a number of professional and public policy implications. First, given the conclusions of the clinical studies, mental health experts performing forensic evaluations at capital sentencing should be attentive to the presence of neurological abnormalities, learning disabilities, psychiatric disorders, and traumatic developmental histories. These vulnerabilities were more frequently identified in studies that undertook broader and more time intensive evaluations. This speaks to the need for comprehensive examinations as well as sufficient interview duration for reasonable self-disclosure to occur. Adequate forensic evaluation at sentencing, therefore, requires particularly careful assessment of the vulnerabilities of this population, as well as knowledge of the current literature regarding the behavioral implications of these deficiencies and underlying adverse developmental factors.

Second, the intellectual, literacy, and psychological deficits of most death row inmates render them incapable of responding to the demands of direct appeals or postconviction proceedings without the assistance and representation of qualified legal counsel (see Cunningham & Vigen, 1999).

Third, the significant percentage of racial minorities, and particularly African-Americans, on death row nationwide has varying interpretations—the most disturbing of these asserting that racial bias in the application of the death penalty, whether by race of offender or race of victim, is both a historical legacy and a continuing social policy problem.

Fourth, there are indications that programming for some death row inmates, involving opportunities for productivity and access to incentives, enhances inmate psychological adjustment and reduces inmate management problems. While a minority require extraordinary security provisions, most death row inmates do not behave violently in prison—whether on death row, integrated with life sentence inmates, or after commutation/re-sentencing in the general prison population. Despite this finding, particularly arduous and profoundly security intensive confinement conditions continue to be employed with this population in many jurisdictions.

Fifth, the incidence of psychological symptoms and mental health problems among death row inmates calls for comprehensive mental health services. Effective treatment of psychological symptoms and disorders among death row inmates is not only humane, but likely to facilitate institutional management and reduce disciplinary misconduct.

Finally, it is disturbing that so many inmates on death row are so obviously damaged—developmentally, intellectually, educationally, neurologically, and psychologically. To the extent that the death penalty is intended to punish those murderers who are most morally culpable, there would seem to be some miscarriage of that intent when it is visited upon individuals who are manifestly damaged, deficient, or disturbed in their psychological development and functioning.

Given the limited research to date on this population, there are many areas where further investigation is recommended. Certainly additional clinical studies of death row samples should be undertaken, utilizing evaluation protocols that are broad and comprehensive in scope. Such comprehensive evaluations may include individually administered intellectual assessment; psycho-educational achievement testing; objective personality testing; malingering screens; semi-structured interviewing regarding symptom experience; and interview and/or records review to obtain history of mental health treatment, head injury or other neurologically significant experience, education, substance abuse, and family of origin. Selected assessment instruments should be well standardized and validated, and results should be reported in sufficient detail for meaningful comparison and integration with research on other death row samples. Given the clinical findings of a high incidence of neurological abnormalities and neuropsychological deficits among several of the death row samples, larger scale research projects investigating the extent and nature of these apparent deficits are critical.

The severity of restrictions reasonably necessary to provide for the security of death row inmates warrants further investigation, particularly as this research might inform correctional policy. Studies comparing the incidence of serious assaults among death row inmates experiencing various confinement policies in different states would be illuminating. Updating Sorensen and Wrinkle (1996), regarding the experience of the Missouri policy of mixing death row inmates with life sentenced murderers, would also make an important contribution to security of confinement questions.

Establishing a broader base of information regarding developmental risk factors or violence precursors in the histories of death row inmates would be relevant both to mitigation evaluations at capital sentencing, as well as community prevention efforts. As the social histories of capital defendants are often intensively investigated by the defense prior to capital sentencing, these records and interviews may provide

a rich source of data regarding developmental and contextual risk factors for capital murder. The U.S. Justice Department has sponsored seminal reviews of the research literature regarding risk and protective factors for violence (Hawkins *et al.*, 2000; U.S. Department of Justice, 1995). These factors would provide an organizational gestalt for file reviews of capital offender histories.

The controversy regarding capital punishment in America has not been matched by correspondingly extensive, ongoing research efforts directed toward death row inmates. Over 10 years elapsed between the clinical studies performed in the 1980s and those resumed in the 1990s. The paucity of research on this population is perplexing in light of the professional, correctional, judicial, and public policy arenas that could benefit from empirical illumination.

REFERENCES

- American Psychological Association. 1996. *Violence and the Family: Report of the American Psychological Association Presidential Task Force on Violence and the Family*. Author: Washington, DC.
- Baldus DC, Pulaski C, Woodworth G. 1983. Comparative review of death sentences: an empirical study of the Georgia experience. *Journal of Criminal Law and Criminology* 74: 661–753.
- Baldus DC, Woodworth G, Pulaski C. 1990. *Equal Justice and the Death Penalty: A Legal and Empirical Analysis*. Northeastern University Press: Boston.
- Barnett A. 1985. Some distribution patterns for the Georgia death sentence. *University of California, Davis Law Review* 18: 1375–1407.
- Beck A, Gilliard D, Greenfeld L, Harlow C, Hester T, Jankowski L, Snell T, Stephan J, Morton D. 1993, March. *Survey of State Prison Inmates, 1991*. U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics (NCJ-136949). U.S. Department of Justice: Washington, DC.
- Bedau HA. 1964. Death sentences in New Jersey, 1907–1960. *Rutgers Law Review* 19: 1–64.
- Bedau HA (ed.). 1982. *The Death Penalty in America* (3rd ed.). Oxford University Press: New York.
- Blake P, Pincus J, Buckner C. 1995. Neurologic abnormalities in murderers. *Neurology* 45: 1641–1647.
- Bluestone H, McGahee CL. 1962. Reaction to extreme stress: impending death by execution. *American Journal of Psychiatry* 119: 393–396.
- Bowers WJ. 1983. The pervasiveness of arbitrariness and discrimination under post-*Furman* capital statutes. *Journal of Criminal Law and Criminology* 74: 1067–1100.
- Bureau of Justice Statistics, U.S. Department of Justice. 2000, February 1. *Homicide Trends in the U.S.: Trends by Race*. <http://www.ojp.usdoj.gov/bjs/homicide/race.htm> [20 September 2000].
- Cunningham MD, Reidy TJ. 1998. Integrating base rate data in violence risk assessments at capital sentencing. *Behavioral Sciences and the Law* 16: 71–95.
- Cunningham MD, Reidy TJ. 1999. Don't confuse me with the facts: common errors in violence risk assessment at capital sentencing. *Criminal Justice and Behavior* 26: 20–43.
- Cunningham MD, Vigen MP. 1999. Without appointed counsel in capital postconviction proceedings: the self-representation competency of Mississippi death row inmates. *Criminal Justice and Behavior* 26: 293–321.
- Death Penalty Information Center. 1998, June. *The Death Penalty in Black and White, Who Lives, Who Dies, Who Decides*. Available from: Death Penalty Information Center, 1320 18th Street NW, 5th Floor, Washington, DC 20036, U.S.A.
- Death Penalty Information Center. 2001, May 14. <http://www.deathpenaltyinfo.org> [31 May 2001].
- Death Penalty Information Center. 2001, June 4. *Federal Death Row Prisoners: Updated June 4, 2001*. <http://www.deathpenaltyinfo.org/fedprisoners.html> [10 June 2001].
- Death Row and the Death Penalty. 1999. *Corrections Compendium* 24: 6–18.
- Ditton PM. 1999. *Mental Health and Treatment of Inmates and Probationers*. U.S. Department of Justice, Bureau of Justice Statistics (NCJ-174463). U.S. Department of Justice: Washington, DC.
- Espy MW, Smylka JO. 1994. *Executions in the U.S. 1608–1987: The Espy File* [Computer file], 3rd ICPSR edition. Ann Arbor: Inter-University Consortium for Political and Social Research [producer and distributor]. National Archive of Criminal Justice Data. <http://www.icpsr.umich.edu/NACJD> [21 September 2000].
- Evans JR. 1997. Quantitative EEG findings in a group of death row inmates. *Archives of Clinical Neurology* 12: 315–316.

- Farr KA. 1997. Aggravating and differentiating factors in the cases of white and minority women on death row. *Crime and Delinquency* 43: 260–278.
- Freedman D, Hemenway D. 2000. Precursors of lethal violence: a death row sample. *Social Science and Medicine* 50: 1757–1770.
- Frierson RL, Schwartz-Watts DM, Morgan DW, Malone TD. 1998. Capital versus noncapital murderers. *Journal of the American Academy of Psychiatry and Law* 26: 403–410.
- Furman v. Georgia, 408 U.S. 238 (1972).
- Gallemore JL, Panton MA. 1972. Inmate responses to lengthy death row confinement. *American Journal of Psychiatry* 129: 167–172.
- Greenberg RM. 1997. Race, the criminal justice system, and community-oriented policing. *Harvard Journal of Law and Public Policy* 20: 397–404.
- Greenfield LA. 1998. *Alcohol and Crime: An Analysis of National Data on the Prevalence of Alcohol Involvement in Crime*. U.S. Department of Justice, Bureau of Justice Statistics (NCJ-168632). U.S. Government Printing Office: Washington, DC.
- Harlow CW. 1994, September. *Comparing Federal and State Prison Inmates, 1991*. U.S. Department of Justice, Bureau of Justice Statistics, (NCJ-145864). U.S. Government Printing Office: Washington, DC.
- Hawkins JD, Herrenkohl TI, Farrington DP, Brewer D, Catalano RF, Harachi TW, Cothorn L. April 2000. *Predictors of Youth Violence*. U.S. Department of Justice: Washington, DC.
- Johnson R. 1979. Under sentence of death: the psychology of death row confinement. *Law and Psychology Review* 5: 141–192.
- Johnson JH, Farrell WC, Sapp M. 1997. African-American males and capital murder: a death penalty mitigation strategy. *Urban Geography* 18: 403–433.
- Kelley BT, Thornberry TP, Smith CA. 1997, August. In the wake of childhood maltreatment. *Juvenile Justice Bulletin*. U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention (NCJ-165257). U.S. Department of Justice. Washington, DC.
- Keyes D, Edwards W, Perske R. 1997. People with mental retardation are dying, legally. *Mental Retardation* 35: 59–63.
- 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: 77–94.
- Lewis DO, Pincus JH, Bard B, Richardson E, Pritchep LS, Feldman M, Yeager C. 1988. Neuropsychiatric, psychoeducational, and family characteristics of 14 juveniles condemned to death in the United States. *American Journal of Psychiatry* 145: 584–589.
- Lewis D, Pincus J, Feldman M, Jackson L, Bard B. 1986. Psychiatric, neurological, and psychoeducational characteristics of 15 death row inmates in the United States. *American Journal of Psychiatry* 143: 838–845.
- Lewis PW. 1979. Killing the killers: a post-Furman profile of Florida's condemned. *Crime and Delinquency* 25: 200–218.
- Lombardi G, Sluder RD, Wallace D. 1997. Mainstreaming death-sentenced inmates: the Missouri experience and its legal significance. *Federal Probation* 61: 3–11.
- Maguire K, Pastore AL (eds). 1999. *Sourcebook of Criminal Justice Statistics, 1998* (NCJ-176356). National Institute of Justice: Washington, DC.
- Marquart JW, Ekland-Olson S, Sorensen JR. 1989. Gazing Into the crystal ball: can jurors accurately predict dangerousness in capital cases? *Law and Society Review* 23: 449–468.
- Marquart JW, Ekland-Olson S, Sorensen JR. 1994. *The Rope, the Chair, and the Needle: Capital Punishment in Texas, 1923–1990*. University of Texas Press: Austin, TX.
- Marquart JW, Sorensen JR. 1988. Institutional and post release behavior of Furman-commuted inmates in Texas. *Criminology* 26: 677–693.
- Marquart JW, Sorensen JR. 1989. A national study of the Furman-commuted inmates: assessing the threat to society from capital offenders. *Loyola of Los Angeles Law Review* 23: 5–28.
- Martell D. 1992. Estimating the prevalence of organic brain dysfunction in maximum-security forensic psychiatric patients. *Journal of Forensic Sciences* 37: 878–893.
- McAdams JC. 1998. Racial disparity and the death penalty. *Law and Contemporary Problems* 61: 153–170.
- McDermott BL. 1990. Defending the defenseless: *Murray v. Giarrantano* and the right to counsel in capital postconviction proceedings. *Iowa Law Review* 75: 1305–1334.
- Mello M. 1988. Facing death alone: the post-conviction attorney crisis on death row. *American University Law Review* 37: 513–607.
- NAACP Legal Defense and Education Fund. 2002, Winter. *Death Row U.S.A.: Death Row Statistics as of January 1, 2002*. NAACP Legal Defense and Education Fund: New York. <http://www.deathpenaltyinfo.org/DeathRowUSA1.html> [1 March 2002].
- O'Shea KA. 1999. *Women and the Death Penalty in the United States, 1900–1998*. Praeger: Westport, CT.
- Panton JH. 1976. Personality characteristics of death-row prison inmates. *Journal of Clinical Psychology* 32: 306–309.

- Panton JH. 1978. Pre- and post-personality test responses of prison inmates who have had their death sentences commuted to life imprisonment. *Research Communications in Psychology, Psychiatry and Behavior* 3: 143–156.
- Patterson GR, DeBaryshe BD, Ramsey E. 1989. A developmental perspective on antisocial behavior. *American Psychologist* 44: 329–335.
- Rapaport E. 1990. Some questions about gender and the death penalty. *Golden Gate University Law Review* 20: 501–565.
- Reidy TJ, Cunningham MD, Sorensen JR. 2001. From death to life: prison behavior of former death row inmates in Indiana. *Criminal Justice and Behavior* 28: 62–82.
- Ressler RK, Burgess AW, Douglas JE. 1988. *Sexual Homicide: Patterns and Motives*. Lexington: New York.
- Robins LN, Regier DA. 1991. *Psychiatric Disorders in America: The Epidemiologic Catchment Area Study*. Free Press: New York.
- Ruiz v. Estelle, 503 F. Supp. 1265 (1980).
- Smith CE, Felix RR. 1986. Beyond deterrence. A study of defense on death row. *Federal Probation* 50: 55–59.
- Snell TL. 2001. *Capital Punishment 2000*. U.S. Department of Justice, Bureau of Justice Statistics (NCJ-190598). U.S. Government Printing Office: Washington, DC.
- Sorensen JR, Pilgrim RL. 2000. An actuarial risk assessment of violence posted by capital murder defendants. *Journal of Criminal Law and Criminology* 90: 1251–1270.
- Sorensen J, Wrinkle RD. 1996. No hope for parole: disciplinary infractions among death-sentenced and life-without-parole inmates. *Criminal Justice and Behavior* 23: 542–552.
- Stanford v. Kentucky, 492 U.S. 361 (1989).
- Steadman HJ, Fabisiak S, Dvoskin JA, Holohean EJ. 1989. A survey of mental disability among state prison inmates. *Hospital and Community Psychiatry* 38: 1086–1090.
- Streib VL. 1992. Death penalty for battered women. *Florida State University Law Review* 20: 163–194.
- Streib VL. 2001a. *Death Penalty for Female Offenders: January 1, 1973, to December 31, 2000*. <http://www.law.onu.edu/faculty/streib/femdeath.htm> [31 May 2001].
- Streib VL. 2001b. *The Juvenile Death Penalty Today: Death Sentences and Executions for Juvenile Crimes, January 1, 1973–December 31, 2000*. <http://www.law.onu.edu/faculty/streib/juvdeath.htm> [31 May 2001].
- Teplin LA. 1990. The prevalence of severe mental disorder among male urban jail detainees: comparison with the epidemiologic catchment area program. *American Journal of Public Health* 80: 663–669.
- Thompson v. Oklahoma 487 U.S. 815 (1988).
- Tiihonen J, Eronen M, Hakola P. 1993. Criminality associated with mental disorders and intellectual deficiency. *Archives of General Psychiatry* 50: 917–918.
- U.S. Department of Justice. 1995. *Guide for Implementing the Comprehensive Strategy for Serious, Violent, and Chronic Juvenile Offenders*. Juvenile Justice Bulletin: OJJDP Update on Programs. Office of Juvenile Justice and Delinquency Prevention (NCJ-153571). U.S. Government Printing Office: Washington, DC.
- Widom CS. 1989a. Child abuse, neglect, and adult behavior: research design and findings on criminality, violence, and child abuse. *American Journal of Orthopsychiatry* 59: 355–367.
- Widom CS. 1989b. Does violence beget violence? A critical examination of the literature. *Psychological Bulletin* 106: 3–28.
- Widom CS. January, 2000. Childhood victimization: early adversity, later psychopathology. (NCJ 180077) *National Institute of Justice Journal*: 2–9.
- Widom CS, Ames MA. 1994. Criminal consequences of childhood sexual victimization. *Child Abuse and Neglect* 18: 303–318.
- Yarvis RM. 1990. Axis I and Axis II diagnostic parameters of homicide. *Bulletin of the American Academy of Psychiatry and Law* 18(3): 249–289.
- Yarvis RM. 1994. Patterns of substance abuse and intoxication among murderers. *Bulletin of the American Academy of Psychiatry and Law* 22: 133–144.
- Yuzon FJ. 1996. Conditions and circumstances of living on death row—violative of individual rights and fundamental freedoms? Divergent trends in judicial review in evaluating the ‘death row phenomenon.’ *George Washington Journal of International Law and Economics* 30: 39–73.