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Empirical Analysis

***1 THE IMPACT OF LEGALLY INAPPROPRIATE FACTORS ON DEATH SENTENCING FOR CALIFORNIA HOMICIDES, 1990-1999**

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This study examines the racial, ethnic, and geographical variations present in the imposition of the **death** penalty in California. In doing so, it analyzes all reported homicides committed in California during the 1990s, comparing those that resulted in a **death sentence** with those that did not.

I. Overview

A. The **Death** Penalty in California, 1972-2003

In February 1972, the California Supreme Court emptied *2 that state's **death** row when it decided *People v. Anderson*. [FN1] The court based its decision on the State Constitution's ban on cruel or unusual punishments. The ban automatically commuted the **sentences** of all 107 inmates then on California's **death** row to life imprisonment. [FN2] Four months later, the United States Supreme Court's landmark **death** penalty ruling in *Furman v. Georgia* [FN3] emptied all other **death** rows in the United States.

Many California voters were not pleased with the effect of *People v. Anderson*. In November 1972, they passed Proposition 17, a ballot initiative that amended the California Constitution specifically to allow for the **death** penalty. [FN4] The California legislature responded to this initiative in 1973 by enacting a statute making the **death** penalty mandatory upon conviction of first-degree murder with a finding of at least one of ten statutorily defined "special circumstances." [FN5] However, *3 when the U.S. Supreme Court approved several new **death** penalty statutes in 1976, [FN6] it also invalidated the mandatory **death** penalty statutes of North Carolina [FN7] and Louisiana. [FN8] As a result of the later decisions, in late 1976 the California Supreme Court invalidated California's mandatory **death** penalty law. [FN9]

The California legislature responded by passing a new **death** penalty statute in 1977 that gave jurors the discretion to decide whether defendants should be **sentenced to death**. [FN10] Like its predecessor, the 1977 statute required a conviction of first-degree murder with the presence of special circumstances for the imposition of a **death sentence**. However, the 1977 statute increased the number of special circumstances that could be used to justify a **death sentence** from ten to twelve.

The **death** penalty in California was further expanded the next year when, **on** November 7, 1978, California voters passed Proposition 7. [FN11] Named after the California Senator who was its author and chief supporter, John V. Briggs, the Initiative superseded the 1977 law. It added fourteen new special circumstances, and broadened some of the older ones to allow prosecutors much more latitude in pursuing the death penalty. [FN12] Since then, several more special circumstances have been added, bringing the total to twenty-five, or a total of thirty-six when various subsections are also included. [FN13] The definition of first-degree murder has also ***4** been broadened, further expanding the potential applicability of the death penalty in California. [FN14]

B. Demographics and Homicides in California

California's population is among the most ethnically and racially diverse in the United States. Table 1a shows that the Hispanic population [FN15] of the state increased from approximately one-fourth of the total state population in 1990 [FN16] to just under one-third by 2000. [FN17] When race alone is measured (regardless of ethnicity), the African American population was 6.7% in 2000, with whites constituting 59.5% of the population, and Asians and others constituting approximately 33.8%. [FN18]

Table 1a

Hispanic Population--California, 1990 and 2000 (total population in parentheses)

	1990	2000
Hispanic	25.8% (7,688,000)	32.4% (10,967,000)
Non-Hispanic	74.2% (22,072,000)	67.6% (22,905,000)
Total Population	29,760,000	33,872,000

***5** Table 1b

Racial Breakdown--California, 1990 and 2000 (in thousands)

	1990	2000
White	69.0% (20,524,000)	59.5% (20,170,000)
African American	7.4% (2,209,000)	6.7% (2,264,000)
Asian & Other	23.6% (7,027,000)	33.8% (11,438,000)
Total Population	29,760,000	33,872,000

California has the unfortunate distinction of leading the United States in the number of homicides perpetrated. [FN19] In 2001, there were 2206 homicides and non-negligent manslaughters in California, followed by

1332 in Texas, 986 in Illinois, 960 in New York, and 874 in Florida. [FN20] With 653 homicides in 2002, Los Angeles recorded more homicides than any city in the country. [FN21]

California health statistics reveal that the risk of homicide victimization varies significantly by gender, race, and ethnicity. They show that between 1980 and 1997, males were approximately four times more likely than females to fall victim to homicide. [FN22] From 1985 through 1997, there was an annual average of 1285 Hispanic homicide victims, 1007 African American homicide victims, 946 white homicide victims, and 184 homicide victims of Asian or "other" races. [FN23] During that thirteen-year period, there were 44,483 homicide victims counted by the California Department of Health Services, of whom 37.6% (16,704) were Hispanic, 29.4% (13,090) were African American, 27.6% (12,293) were white, *6 and 5.4% (2396) were Asian/other. [FN24]

By a wide margin, African Americans have the highest crude homicide death rate per 100,000 population. [FN25] They averaged 47.4 deaths per year, 1985-1997. Crude annual death rates during this period averaged 16.0 for Hispanic victims, 6.1 for Asian/other victims, and 5.6 for white victims. [FN26] The victimization rate for African Americans in California is high, but not unusual. National estimates from the National Crime Victimization Survey in 2000 show that African Americans reported 34.1 instances of victimization from violent crime [FN27] per 1000 population, compared to 27.9 for Hispanics, 26.5 for whites, and 8.4 for Asians. [FN28]

C. Post-Furman Death Sentencing and Executions in California

As of July 1, 2005, California had the largest death row population in the United States, with 648 inmates under sentences of death. [FN29] The race/ethnic composition of this population is presented in Table 2. Note from Table 1b that the 2000 California population was 6.7% African American; in contrast, the racial makeup of California's death row in July 2005 was 36% African American. [FN30] This raises the obvious question of whether death sentencing rates for African Americans are disproportionate to the rate of involvement of African Americans in capital offenses.

*7 Table 2

Racial Breakdown of California Death Row Inmates, July 1, 2005 (N = 648) [FN31]

Race	Number	Proportion
White	253	.39
African American	233	.36
Hispanic	128	.20
Asian	20	.03
Native American	14	.02

Between 1972 and November 1, 2005, there were eleven prisoners executed in California. [FN32] The

names of those executed, the date of execution, the number of victims they were convicted of murdering, and the race of the defendant and his victim(s) is displayed in Table 3.

Table 3

Executions in California, 1972 to Sept. 15, 2005 (N = 11)

Date	Name	Defendant Race/Ethnicity & Victim Race/Ethnicity*
04-21-92	Robert Harris	W-2W
08-24-93	David Mason**	W-5W
02-23-96	William Bonin	W-4W
05-03-96	Keith Williams	W-3L
07-14-98	Thomas Thompson	W-W
02-09-99	Jaturun Siripongs***	A-2A
05-04-99	Manny Babbitt	B-W
03-15-00	Darrell Keith Rich	N-2W
03-27-01	Robert Massie**	W-W
01-29-02	Stephen Anderson	W-W
01-19-05	Donald Beardslee	W-2W

* W = White; L = Hispanic; A = Asian; B = African American; N = Native American

** Consensual

*** Foreign National

	White Victim	Asian Victim	Hispanic Victim
White Defendant	7	-	1
African American Defendant	1	-	-

Native American Defendant	1	-	-
Asian Defendant	-	1	-

***8** The table shows there were seven white defendants executed, one African American, one Hispanic, one Asian, and one Native American. [FN33] Of the eleven, nine were convicted of killing non-Hispanic whites, one was convicted of killing an Asian, and one was convicted of killing a Hispanic. [FN34] Seven (63.6%) of those executed were convicted of multiple murders. [FN35] Two (18%) dropped their appeals and asked to be executed. [FN36] Seven white inmates, one African American inmate, and one Native American inmate were executed for killing whites. [FN37] One white inmate was executed for killing three Hispanics, and one Asian was executed for killing two other Asians. [FN38] Despite the California Health Department data indicating that just 27.6% of the murder victims in the state are white, [FN39] 82% (9) of those executed were put to death for killing whites. [FN40] While one cannot generalize from eleven cases, the pattern raises the question of whether a victim's race is inappropriately associated with decisions to impose the death penalty in California.

We now turn our attention to a review of previous research that has investigated patterns in death sentencing in California.

***9** D. Research on Race, Arbitrariness, and Death Sentencing in California

The possibility of racial bias in California death sentencing has attracted the attention of several researchers over the past four decades. However, only one major study was conducted on pre-Furman jury decisions in California capital cases. [FN41] The study examined 238 cases between 1958 and 1966 in which California juries decided whether to impose death on defendants convicted of first-degree murder. The death penalty was actually imposed in 103 of the cases. The study found that the defendant's race was uncorrelated with whether or not the death penalty was imposed, but that the economic status of the defendant was strongly associated with death sentencing; "blue-collar" defendants were much more likely to be sentenced to death than those from "white-collar" backgrounds. [FN42]

Other research projects have focused on the question of whether death sentencing is either predictable or arbitrary, although few researchers have examined the possibility that race may affect decisions in the processing of California homicide cases under the death penalty statute now in force. Only one research project has focused specifically on the possible impact of race. [FN43]

Stephen P. Klein and John E. Rolph, researchers at the Rand Corporation, prepared that study for the California Attorney General and the Los Angeles County District Attorney. [FN44] Their work, however, did not examine prosecutorial decisions. Instead, it examined 496 cases in which the prosecutors had charged special circumstances and the defendants had been convicted of first-degree murder. [FN45] ***10** Thus, Klein and Rolph's research focused only on penalty trial sentencing decisions, almost all of which are made by juries. [FN46] The study began with homicides committed on August 10, 1977 (the date that California's death penalty statute took effect). [FN47] Only defendants under a sentence of death or life without parole on March 1, 1984, were included in the sample. [FN48] In the end, 352 inmates (71%) were sentenced to life without parole, and 144 (29%) were sent to death row. [FN49]

Klein and Rolph's analysis divided the cases into white and non-white victims and defendants, omitting further racial/ethnic distinctions. [FN50] Initially they found a small race-of-victim difference. Thirty-two percent of defendants with white victims were sentenced to death, compared to 23% of those with non-white victims. [FN51]

The authors then constructed a statistical model that utilized several factors to predict whether the defendants would be sentenced to life without parole or to death. [FN52] The model correctly predicted the sentence in 81% of the cases in the sample. [FN53] Because 71% of defendants in the sample were sentenced to life without parole, [FN54] however, the model increased predictability only slightly. [FN55] Of the 144 defendants sentenced to death, the authors' model predicted a death sentence in less than half (70) of the cases. [FN56] Upon statistically controlling for legally relevant variables, [FN57] the authors concluded that neither the victim's nor the *11 defendant's race had any impact on death sentencing. [FN58]

A study by Richard Berk, Robert Weiss, and Jack Boger examined 363 homicides (excluding vehicular homicides) from San Francisco County that occurred between 1978-1988. [FN59] This study focused on identifying the cases in which prosecutors were most likely to seek the death penalty (that is, cases in which special circumstances were charged). [FN60] The researchers were more interested in the consistency (or inconsistency) of prosecutorial decisions than in race. [FN61] While no attempt was made to identify which cases were the most aggravated, its data revealed that special circumstances were charged in 27 of the 363 cases (7.4%). [FN62] After statistically controlling for the victim's sex, the defendant's prior criminal record (number of prior serious felonies and number of prior homicides), the number of victims, and the victim-defendant relationship, the authors found that the odds of being charged with special circumstances were 4.8 times higher for white defendants than defendants of other races, and 3.66 times higher for those who killed women rather than men. [FN63] Overall, the study concluded that there is systematic capriciousness in the prosecutors' charging decisions. [FN64]

Raymond Paternoster challenged this conclusion, arguing that the Berk, Weiss, and Boger data showed a "rough consistency" in the processing of homicide defendants. [FN65] He noted that more culpable defendants generally have increased *12 odds of being charged with special circumstances [FN66] and concluded that

[t]here are apparent and meaningful distinctions between those who are more likely to be charged with a capital offense and those who are less likely to be so charged. The capital charging system at work in San Francisco does not operate like a pure or traditionally conceived lottery but instead tends to produce just results in the sense of treating different cases differently and like cases comparably. [FN67]

Instead of substantial capriciousness, Paternoster argued that the unexplained variance in charging decisions could be a product of variables not measured by the researchers. [FN68] In response, Berk, Weiss, and Boger rejected this hypothesis, pointing out that Paternoster had no evidence to support the hunch that unmeasured variables could explain the disparities. [FN69] In the end, the authors suggested that their disagreement boils down to a question of what sorts of capriciousness are acceptable. [FN70]

In a later paper, Robert Weiss, Richard Berk, and Catherine Lee extended their analysis by examining data on 427 San Francisco homicides during the period between 1986 through 1993. [FN71] They concluded that about two-thirds of the variation in charging could be explained; the remaining one-third was random or capricious. [FN72]

II. Methodology and Data Sources

To examine the possible relationship between racial and ethnic traits and the imposition of the death penalty in California, we examined the characteristics of all those sentenced to death in the state before March 15, 2003, for *13 homicides that occurred between January 1, 1990, and December 31, 1999. We selected the decade of the 1990s so we could examine the most recent patterns of death penalty sentencing in California. The 1990s were also chosen because we assumed that trials for virtually all identified offenders in the decade had concluded by the time our data were collected. [FN73] We believe that any unconsidered death penalty cases for murders committed during the 1990s will not affect our ultimate conclusions. [FN74]

A. Death Penalty Data Set

Because no public agency in California collects detailed information on who is sentenced to death, the first challenge of this research project was to construct a Death Penalty Data Set. We began with a small data base compiled by the California Department of Corrections. [FN75] This source gave basic information about every inmate currently on death row, including name, age, sex, race/ethnicity, date of sentence, date of offense, and county of commitment. [FN76] We also obtained information from a private data base maintained by the California Appellate Project in San Francisco. [FN77] Their files were used to supplement and check the reliability of the Department of Corrections list, and allowed us to include cases where defendants had been sentenced to death for murders during the 1990s but were, for whatever reason, no longer on death row. [FN78] The California Appellate Project's files *14 also allowed us to determine the number of victims per defendant and whether the homicides that sent the defendants to death row were accompanied by additional felonies. [FN79]

Where discrepancies were found, we resolved them through newspaper searches or phone interviews with attorneys involved in the case. While the California Department of Corrections gives information on the race/ethnicity of all death row inmates, it does not provide data on the race/ethnicity of the victim(s) whom the death row inmate was convicted of killing. [FN80] In some cases, we found a picture of the victim or a newspaper article that clearly identified the victim's race and ethnicity. For other death row inmates, we obtained the information from attorneys familiar with the case. In 187 cases, we purchased a copy of the victim's or victims' death certificate(s), allowing us to determine race/ethnicity directly from that source.

Using this methodology, we were able to identify 302 individuals sentenced to death in California for homicides that occurred in the 1990s. To measure race and ethnicity, we first determined whether or not the defendant was Hispanic, and, if not, whether his or her race was white, African American, or other. For our analysis of racial and ethnic variations in the imposition of the death penalty, we eliminated thirty-nine cases where a person was sentenced to death for multiple murders that took the lives of victims from different races or ethnic groups. Consequently, our study focuses on 263 death penalty cases. For our examination of geographic variations in the imposition of the death penalty, all 302 death sentences were included in the analysis.

B. Homicide Data

We gathered information on all California homicides that occurred between 1990 and 1999 from two sources: the Federal Bureau of Investigation's (FBI) Supplementary *15 Homicide Reports (SHR) [FN81] and homicide data from death certificates collected by the Office of Vital Records, a subdivision of the California Department of Health Statistics. [FN82] Each data set includes a slightly different set of homicide cases and variables. Data were obtained from the two sources to cross check the consistency of race and ethnicity information.

1. Supplementary Homicide Reports

Supplementary Homicide Reports are compiled from local police departments throughout the United States that report data on homicides either through their state crime reporting programs or directly to the FBI for inclusion in the FBI's Uniform Crime Reports. [FN83] While the Reports do not list the defendants' or victims' names, they do include the following information: the month, year, and county of the homicide, the age, gender, race, and ethnicity of the suspects and victims, the victim-defendant relationship, the weapon used, and information on circumstances surrounding a victim's death, which includes whether a homicide was accompanied by additional felonies (e.g., robbery or rape). [FN84] Local law enforcement agencies usually report these data long before the defendant has been convicted, so offender data are for "suspects," not convicted offenders. [FN85]

The FBI defines murder and non-negligent manslaughter [FN86] as:

*16 [t]he willful (non-negligent) killing of one human being by another. (Deaths caused by negligence, attempts to kill, assaults to kill, suicides, and accidental deaths are excluded. The Program classifies justifiable homicides separately and limits the definition to: (1) the killing of a felon by a law enforcement officer in the line of duty; or (2) the killing of a felon, during the commission of a felony, by a private citizen.) [FN87]

As the Bureau of Justice Statistics notes, "The classification of this offense is based solely on police investigation as opposed to the determination of a court, medical examiner, coroner, jury, or other judicial body." [FN88]

2. Office of Vital Statistics

Vital Statistics mortality data are also collected nationally as part of a mandatory reporting program. [FN89] As described by the National Center for Health Statistics:

[i]n the United States, state laws require death certificates to be completed for all deaths, and federal law mandates national collection and publication of deaths and other vital statistics data. The National Vital Statistics System is the result of the cooperation between CDC and the states to provide access to statistical information from death certificates. Mortality data are used to monitor the underlying and contributing causes of death for persons dying in the United States and to determine life expectancy. [FN90]

Thus, because state law mandates their collection, Vital Statistics data are an excellent source of information for *17 deaths caused by homicide. They are also a more comprehensive source of data than the inconsistent or incomplete FBI data.

A state's department of public health or equivalent agency typically collects mortality data. [FN91] In California, the designated agency is the Office of Vital Records, which is part of the California Department of Health Services. [FN92] The California Department of Public Health defined "homicide" according to the International Classification of Disease's ninth (ICD-9 [FN93]) and tenth (ICD-10 [FN94]) revisions. [FN95] Under both classification systems, "homicide" includes death from injuries inflicted with intent to injure or kill, by any means, *18 but excludes injuries due to legal intervention (ICD-9 codes E970-E978) and operations of war (ICD-9 codes E990-E999). [FN96]

3. Comparing Definitions of Homicide

The FBI and International Classification of Disease/National Center for Health Statistics definitions of homicide differ to the degree that the latter excludes deaths due to legal intervention initiated by actions of law enforcement officers, whereas the former excludes justifiable homicides [FN97] by both law enforcement officers and non-law enforcement civilians (hereinafter "private citizens"). Thus, NCHS include a relatively small num-

ber of justifiable homicides by private citizens, whereas FBI statistics exclude such homicides.

The FBI's definition excludes justifiable homicides committed by private citizens, and its data have the key advantage of providing general information on the circumstances surrounding homicides and on the suspected offenders. [FN98] Because the FBI data give some details about the homicide, they are particularly valuable for estimating the number of defendants who might be the target of death penalty prosecutions. On the other hand, Vital Statistics homicide data provide somewhat more accurate measures of homicides committed because the collection of death certificate information is mandated by law, and detailed procedures governing the collection of data have been in place for over a century. [FN99] In the end, the availability of data from these two sources allowed us to cross-validate homicide information obtained from each. [FN100]

To refine the accuracy of the data on estimated numbers of offenders obtained from FBI data, we adjusted the FBI *19 data using Vital Statistics data on homicide victims. This procedure allowed us to correct for some small underreporting of homicides in the FBI data, as well as for missing data on race/ethnicity. [FN101] To weight the FBI data, for each race/ethnicity combination of homicide victims we divided the total number of homicides in the Vital Statistics data with the total number in the FBI data. The weighting procedure is described in detail in Appendix A.

III. Results

A. Victim Race and Ethnicity Effects

Vital Statistics data originate from death certificates and, therefore, give information only on victims, not on offenders. [FN102] As such, they can be used to calculate probabilities of death sentences for different race and ethnic categories of homicide victims. Table 4 presents these probabilities for different categories of race and ethnicity by using 1990-1999 Vital Statistics victim data to show that death sentences in California are rarely given; less than 1% of all homicides result in a death sentence. [FN103] While the overall number of death sentences is low (302), there are glaring differences in the rate of death sentences across categories of victim race/ethnicity. [FN104] Defendants convicted of killing non-Hispanic white victims receive the death penalty at a rate of 1.75 per 100 hundred victims, [FN105] compared to a rate of .47 for defendants convicted of killing non-Hispanic African American victims. [FN106] Thus, homicides involving non-Hispanic white victims are 3.7 times as likely to result in a death sentence than those with non-Hispanic African American victims. [FN107] The death sentencing rate for those with Hispanic victims is .369, indicating that white victim homicides are 4.73 times as likely to result in death as Hispanic victim cases. [FN108]

*20 Table 4

Death Sentence Rates per 100 Victims and Inter-group Ratios (Vital Statistics Data)

Race/Ethnicity of Victim	Vital Statistics Victims	Defendants Sentenced to Death	Death Sen- tence Rate Per 100 Victims	Ratio of White Victim/Other Vic- tim Death Sen- tence Rate
White non-	8136	142	1.745	----

Hispanic				
African American non-Hispanic	9338	44	.471	3.70
Hispanic	14,089	52	.369	4.73
Other race, non-Hispanic	2037	25	1.227	1.42
Multiple Race/Ethnicity Incidents		39		
Unknown	314			
TOTAL	33,914	302	.890	

Chi Square = 144.968; df = 3; p < .001.

This Chi Square is calculated only for the four categories of race/ethnicity that are identified (i.e., white non-Hispanic, African American non-Hispanic, Hispanic, and other race, non-Hispanic).

We now shift attention to the FBI's Supplementary Homicide Reports' offender data. FBI data list one case per homicide suspect and give us information about the race/ethnicity of both the suspect and the suspect's victim(s). [FN109] Thus, cases in which a suspect was not identified by the local law enforcement agency are excluded from this analysis. Since the Death Penalty Data Set is offender-based (that is, one case per defendant sentenced to death), the FBI database allows us to compare information collected by law enforcement on all homicide suspects with information on all defendants sentenced to death. Tables 5 and 6 use FBI *21 offender data to calculate the probabilities of receiving a death sentence based on the victim's race/ethnicity. These data have the advantage of collecting, for each homicide incident, information on the race, ethnicity, age, and gender of the suspected offender and the victim(s). A second advantage of the FBI data is that they provide information on some (though not all) of the most important legally relevant factors in death sentencing decisions. Specifically, the data provide information on the number of victims associated with a given homicide incident and on the felony circumstances (e.g., rape or robbery) associated with the homicide. [FN110] The latter information enables us to develop measures of the potential aggravating circumstances associated with homicide incidents contained in the FBI data.

Table 5

Death Sentence Rates per 100 Offenders and Inter-group Ratios by Race/Ethnicity of the Victim

(SHR Offender Data, Weighted Sample)

Race of Vic-	SHR Offend-	Offenders	Death Sen-	Ratio of White
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tim	ers	Sentenced to Death	tence Rate per 100 Offenders	Victim/Other Vic- tim Rate
White non- Hispanic	6775	142	2.096	----
African Amer- ican non-Hispanic	6484	44	.679	3.09
Hispanic	10,749	52	.484	4.33
Other race, non-Hispanic	1667	25	1.500	1.40
TOTAL	25,675	263		

Chi Square = 119.079; df = 3; p < .001.

Tables 5 and 6 present death sentence rates by the race and ethnicity of victims using weighted FBI homicide offender data. Table 5 shows that 2.1% of the offenders suspected of killing non-Hispanic whites were sentenced to death, compared to .68% of those suspected of killing non-Hispanic African American, .48% of those suspected of killing *22 Hispanics, and 1.5% of those suspected of killing non-Hispanics of other races. The last column of Table 5 compares these rates. It shows that the probability of a death sentence for those who kill non-Hispanic whites is 3.09 times higher than those suspected of killing non-Hispanic African Americans and 4.33 times higher than those suspected of killing Hispanics. [FN111] The Chi Square figure tells us that the probability of obtaining these results by chance is less than one out of 1000. [FN112] Therefore, the data in Table 5 further support the hypothesis that death sentencing in California is correlated with the race/ethnicity of the homicide victim.

The increased likelihood of being sentenced to death for killing white victims may be explained by the theory that such homicides are more “aggravated” or “deserving of the death penalty” than homicides that victimize Hispanics and non-whites. Table 6 tests this hypothesis. Here we divide the homicides in Table 5 into three categories: those with no aggravating circumstances, those with one aggravating circumstance, and those with two aggravating circumstances. [FN113] If homicides that victimize whites are indeed more aggravated than other homicides, death sentencing rates will be similar across each category of victim race/ethnicity for each level of aggravation.

As noted, information on two types of aggravating circumstances is available in both the FBI data and the Death Penalty Data Set. The first aggravating circumstance is whether the homicide had an accompanying felony. The second is whether the homicide incident involved more than one victim. If a homicide offender in the FBI data or the Death Penalty Data Set committed a felony along with a homicide or was suspected of killing more than one victim, they were coded as having one aggravating circumstance. Likewise, if such a person was suspected of committing a felony along with a homicide and there was more than one homicide victim, they were coded as having two aggravating circumstances. Finally, if the offender was involved in neither of the circumstances, he or she was coded as having no aggravating circumstances identified by our measures *23 These two circumstances are among the most common types of aggravating circumstances used by prosecutors, jurors,

and judges to justify death sentences. [\[FN114\]](#)

Table 6

Death Sentence Rates per 100 Offenders and Inter-group Ratios by Race/Ethnicity of the Victim, Controlling for Aggravating Circumstances

(SHR Offender Data, Weighted Sample)

Race of Victim	SHR Offenders	Offenders Sentenced to Death	Death Sentence Rate per 100 Offenders	Ratio of White Victim/Other Victim Rate
With No Aggravating Circumstances				
White non-Hispanic	4775	37	.775	----
African American non-Hispanic	4909	5	.102	7.60
Hispanic	8576	6	.070	11.07
Other race, non-Hispanic	1127	5	.444	1.75
TOTAL	19,387	53		

For above data, Chi Square = 63.560; df = 3; p < .001.

With One Aggravating Circumstance

White non-Hispanic	1930	88	4.560	----
African American non-Hispanic	1501	30	1.999	2.28

Hispanic	2085	33	1.583	2.88
Other race, non-Hispanic	503	16	3.181	1.43
TOTAL	6019	167		

For above
data, Chi Square =
37.433; df = 3; p
< .001.

With Two Ag-
gravating Circum-
stances

White non- Hispanic	70	17	24.286	----
African Amer- ican non-Hispanic	74	9	12.162	2.00
Hispanic	88	13	14.773	1.64
Other race, non-Hispanic	37	4	10.811	2.25
TOTAL	269	43		

For above
data, Chi Square =
5.230; df = 3; p =
.156.

*24 The Chi Square for the 2X2 version of this sub-table with race/ethnicity grouped into two categories (white non-Hispanic and other) is Chi Square = 4.854; df = 1; p = .028.

The results displayed in Table 6 do not support the hypothesis that death sentencing rates in cases involving white victims are higher because such homicides are more aggravated. The table shows that if we compare death sentencing rates for those who kill non-Hispanic whites and non-Hispanic African Americans, strong differences persist even across different levels of aggravation. [FN115] Where there are no aggravating circumstances in existence, those who kill non-Hispanic whites are 7.6 times as likely to be sentenced to death as those who kill non-Hispanic African Americans. [FN116] Where there is one aggravating circumstance present, those

who kill non-Hispanic whites are 2.28 times as likely to be sentenced to death as those who kill non-Hispanic African Americans. [FN117] Where two aggravating circumstances exist, the ratio is 2.00. [FN118] Similar differences are present when death sentencing rates for those who kill non-Hispanic whites are compared to those who kill Hispanics or non-Hispanic victims of “other” races. [FN119] Thus, among homicides with two *25 aggravating circumstances, the death sentencing rate for non-Hispanic whites is 24.29, which is much higher than the rate for all other categories combined (26/199, or 13.07). [FN120]

Appendix B contains further analysis focusing on the race of the defendant. This analysis shows that overall, non-Hispanic white defendants are more likely than other murder suspects to be sentenced to death. [FN121] However, because almost all murders done by whites take the lives of white victims, the race-of-defendant effect, which becomes statistically insignificant in the case of African American victims, is reversed in the case of white victims. That is, blacks who kill whites are more likely to be sentenced to death than whites who kill whites. [FN122] The likelihood of receiving a death sentence remains higher for white defendants only in the case of Hispanic victims, where a relatively small number of white suspects appear more likely to receive a death sentence. [FN123] In summary, the race of defendant relationship, where white suspects appear to have higher probabilities of receiving the death sentence, essentially disappears when it is examined in conjunction with the race of the victim.

B. Regional Effects

We now turn our attention to geographic patterns of death sentencing. According to the California Department of Corrections, on January 28, 2004, ten of California's fifty-eight counties had sixteen or more inmates under a sentence of death. [FN124] These counties and the number of death row inmates they had sentenced as of that date are listed in Table 7. By far, the county with the highest number of inmates sentenced to death is Los Angeles, with almost four times as many death row inmates as any other county in the state. [FN125]

*26 Table 7

Top Ten Death-Sentencing Counties (Measured by Number of Inmates on Death Row, Jan. 28, 2004) [FN126]

County	Number of Inmates on Death Row: January 28, 2004
.....	
1. Los Angeles	194
.....	
2. Riverside	54
.....	
3. Orange	49
.....	
4. Alameda	43

.....		
5. Sacramento		34
.....		
6. San Bernardino		34
.....		
7. San Diego		32
.....		
8. Santa Clara		27
.....		
9. Kern		23
.....		
10. San Mateo		16

Counting the numbers of death row inmates by county does not get us very far, however, as it is quite possible that counties with the most inmates on death row are also the counties that experienced the highest number of homicides during the 1990s. Table 8 compares death sentences to number of homicides, ordering California's fifty-eight counties based on a ratio of death sentences to homicides. In almost half the counties--twenty-eight of the fifty-eight (48.3%)--no death sentences were returned for homicides in the 1990s. [FN127] However, these twenty-eight counties accounted for just 5% of the homicides in the state. The only county with over 100 homicides and no death sentences was San Francisco. [FN128]

***27** Table 8

Homicides and Death Sentences by County of Venue (Vital Statistics Data)

County	Homicides *	Death Sentences **	Ratio
.....			
Solano	220	1	.0045
.....			
San Joaquin	643	3	.0047
.....			
Los Angeles	16,113	93	.0058
.....			
Santa Barbara	152	1	.0066

.....				
Contra Costa	846	6	.0071	
.....				
San Diego	2010	15	.0075	
.....				
Fresno	993	8	.0081	
.....				
Merced	119	1	.0084	
.....				
STATE RATIO	33,914	302	.0089	
.....				
San Bernardino	2015	20	.0099	
.....				
Madera	101	1	.0100	
.....				
Alameda	1773	18	.0102	
.....				
Butte	95	1	.0105	
.....				
Tulare	285	3	.0105	
.....				
Imperial	93	1	.0108	
.....				
Monterey	325	4	.0123	
.....				
San Mateo	232	3	.0129	
.....				
Sacramento	1081	14	.0130	

.....				
Kern	661	10	.0151	
.....				
Orange	1433	23	.0161	
.....				
Santa Clara	653	12	.0184	
.....				
Stanislaus	317	6	.0189	
.....				
Sonoma	146	3	.0205	
.....				
Riverside	1310	32	.0244	
.....				
Ventura	305	8	.0262	
.....				
Lake	37	1	.0270	
.....				
San Luis Obispo	67	2	.0299	
.....				
Shasta	100	5	.0500	
.....				
Napa	33	2	.0606	
.....				
King	62	4	.0645	
.....				
Colusa	10	1	.1000	
.....				
Counties with No Death Sentences				

.....		
Alpine	1	0
.....		
Amador	7	0
.....		
Calaveras	22	0
.....		
Del Norte	24	0
.....		
El Dorado	55	0
.....		
Glenn	7	0
.....		
Humboldt	78	0
.....		
Inyo	3	0
.....		
Lassen	23	0
.....		
Marin	53	0
.....		
Mariposa	10	0
.....		
Mendocino	59	0
.....		
Modoc	1	0
.....		
Mono	2	0
.....		

Nevada	25	0
.....		
Placer	78	0
.....		
Plumas	14	0
.....		
San Benito	6	0
.....		
San Francisco	910	0
.....		
Santa Cruz	87	0
.....		
Sierra	4	0
.....		
Siskiyou	18	0
.....		
Sutter	29	0
.....		
Tehama	23	0
.....		
Trinity	12	0
.....		
Tuolumne	24	0
.....		
Yolo	58	0
.....		
Yuba	51	0
.....		
Missing	0	0

.....
 *28 * County of occurrence
 ** County of trial

Comparing ratios of death sentences to total homicides by county can result in misleading conclusions. Because the denominators in such comparisons include all homicides, the ratios do not take into consideration variations in arrest rates *29 across counties. [FN129] Vital Statistics data tell us about all homicides, regardless of whether or not the offender has been identified. In addition, the analysis of individual counties presented in Table 8 does not examine whether particular county attributes (for example, population density or racial/ethnic characteristics of the county) may account for the substantial variation we observe in county death sentencing rates. To address this issue, we used weighted FBI/SHR offender data (instead of the Vital Statistics victim data used in Table 8) to calculate death sentence rates for each county. As noted above, the FBI/SHR data only include information on offenders who are known to the police, and the police generally identify an offender at the time of--or shortly before--his or her arrest. Because many homicides are never solved by the police, comparing ratios of death sentences to known offenders per county is therefore better than comparing ratios of death sentences to the total number of homicide victims.

To determine whether county attributes help explain the observed geographic variation in death sentence rates, we examined two characteristics of California counties: the urban character of the county and the proportion of the county's non-Hispanic white residents. We focused on urban-rural differences because it has been identified as an important dimension in a number of previous studies of capital punishment. [FN130] This factor was measured by the county's population density. Given our interest in race, we also included a measure of the county's non-Hispanic white population to see if it had any impact on death sentencing rates. For the purpose of the regional analyses, the FBI offender estimates are tabulated by county of trial, since these locales are where sentencing decisions are made. [FN131]

*30 Table 9 presents a cross-classification of death sentencing rates and the population density of California counties. For this analysis, counties were grouped into three levels of density: those with population densities under 300 inhabitants per square mile, counties with between 300 and 999 inhabitants per square mile, and counties with 1000 or more inhabitants per square mile. [FN132] Table 9 shows that in counties with a low population density, there are 1.71 death sentences per 100 homicides. Death sentencing rates are lower for counties with a population of between 300 and 999 inhabitants per square mile, [FN133] and are the lowest for densely populated counties. [FN134] Thus, death sentencing rates are highest in counties with a low population density and lowest in densely populated counties.

Table 9

Death Sentences and Death Sentence Rate per 100 Offenders by the Population Density of California Counties for 1990 to 1999 (SHR Offender Data, Weighted Sample)

Population Density (pop. per sq. mile)	SHR Offenders	Offenders Sentenced	Rate per 100 Victims
0-299	6181	106	1.71

300-999	2450	27	1.10
1000 and over	17,304	169	.98
Total	25,934	302	1.16

Chi Square = 21.660; df = 2; p < .001.

Table 10 shows that death sentencing rates are also related to the racial makeup of California counties. This table divides counties into three groups according to the proportion of their population that is non-Hispanic whites. Where this proportion is high (50% and above), death sentencing rates are also the highest (1.75 death sentences per 100 homicides). [FN135] Where the non-Hispanic white population is lowest (under 40% of the total county *31 population), the death sentencing rate is also the lowest (.77 death sentences per 100 homicides). [FN136]

Table 10

Death Sentences and Death Sentence Rate per 100 Offenders by the Percent of County Population that is White non-Hispanic in California Counties for 1990 to 1999 (SHR Offender Data, Weighted Sample)

Percent of County Pop. White non-Hispanic	SHR Offenders	Offenders Sentenced	Rate per 100 Victims
Under 40%	13,162	102	.77
40% to 49.9%	5990	81	1.35
50% and over	6782	119	1.75
Total	25,934	302	1.16

Chi Square = 39.71; df = 2; p < .001.

Overall, Tables 9 and 10 support the conclusion that death sentencing in California is highest in counties with a low population density and a high proportion of non-Hispanic white residents. The more white and more sparsely populated the county, the higher the death sentencing rate.

*32 C. Logistic Regression Analysis [FN137]

To examine the combined effects of region, race/ethnicity, and aggravating circumstances on death penalty decisions in California, a multivariate statistical technique was used. For the analysis of dichotomous dependent variables (such as death sentence vs. no death sentence), the appropriate statistical technique is logistic regression analysis. To conduct this analysis, we first merged our two offender data sets: the Death Penalty Data Set and the data on homicide offenders from the FBI/SHR data set. Cases were matched based on the victim's race and ethnicity, aggravating circumstances, urban character of the county of trial (under 300 inhabitants, 300 to

999 inhabitants, and 1000 and over inhabitants per square mile), and the racial and ethnic character of county of trial. Multiple victim homicide incidents with victims of differing races/ethnicities were not included in the analysis. We were unable to match one of the 263 death penalty cases with a corresponding case in the FBI/SHR data set and, consequently, we deleted that case (a homicide with one Hispanic victim). [FN138] This reduced the *33 number of death penalty cases in our data to 262.

Other researchers who have used this matching method have also found minor problems in matching. Samuel Gross and Robert Mauro, for example, note that, “[o]ften more than one SHR case would correspond to a given death row case; however, since this matching was done only for the purpose of analyzing data on variable(s) that were reported in both sources, it did not matter whether a particular death row case was identified with a unique FBI/SHR case.” [FN139]

Finally, we weighted the merged FBI/SHR offender and Death Penalty Data Set using the same methods (i.e., weights derived from vital statistics data) used in the tabular analyses. Here, however, we did not weight the 262 offenders in death penalty cases because each case represents only one offender sentenced to death after one trial, making re-weighting unnecessary. These 262 cases were therefore assigned a weight of “one.”

Table 11 presents the results of the logistic regression analysis. The independent variables are all entered into the analysis as dichotomous measures. Thus, where there were no aggravating circumstances or one aggravating circumstance, such data were entered as dichotomous variables. Cases with two aggravating circumstances were left out of the equation so they could be used as the reference or comparison category. Similarly, variables measuring the race and ethnicity of victims were entered into the analysis as dichotomous variables, one for non-Hispanic African American victims, a second for Hispanic-only victims, and a third for “other race non-Hispanic victims.” Non-Hispanic white victims were left as the reference or comparison category.

Variables measuring the racial/ethnic character of California counties were also entered into the analysis as dichotomous variables. These included counties with non-Hispanic white populations between 40 and 49.9%. Counties where 50% or more of the population were non-Hispanic whites were left as the reference category.

Finally, variables measuring the urban character of California counties were entered into the analysis as *34 dichotomous variables. Counties with population densities of 1000 or more inhabitants per square mile were included, as were counties with 300 to 999 inhabitants per square mile. Those counties with under 300 inhabitants per square mile were set aside as the reference category.

To examine the estimated effect of a single independent variable, controlling for the effects of all other variables, we used the exponentiated value of the beta (β) coefficient, which is the logistic regression beta coefficient, $\text{Exp}(\beta)$. [FN140] The $\text{Exp}(\beta)$ coefficients in Table 11 show that the odds of receiving a death sentence for killing a non-Hispanic African American victim(s) decreases by a factor of .407, controlling for the other independent variables. This is the odds ratio of an offender who killed a non-Hispanic African American victim being sentenced to death. An odds ratio of exactly 1.0 would mean that the likelihood of receiving the death sentence changed by a factor of 1, or not at all. In this case, the results indicate that the odds of receiving a death sentence for killing a non-Hispanic African American victim are, on average, 59.3% lower than those homicides with non-Hispanic white victims [FN141] controlling for the other variables in the analysis. Similarly, again controlling for the effects of all other variables, the odds of receiving a death sentence for killing a Hispanic victim are, on average, 67.1% lower [FN142] compared to homicide incidents with non-Hispanic white victims. Both of these effects are statistically significant and support the conclusion that the death penalty in California is much less likely in cases in which minorities are victimized, independent of the level of aggravation of the hom-

icide.

***35** Table 11

Logistic Regression Analysis of County Characteristics, Race/Ethnicity of Victim, and Aggravating Circumstances on the Imposition of a Death Sentence*

Independent Variables**	<<beta>>	Sig.	Exp(<<beta>>)
Counties 1000 and higher	-.321	.163	.725
Counties 300 to 999	-.156	.341	.856
Counties < 40% white	-.509	.005	.601
Counties 40% - 49.9% white	-.201	.213	.818
African American non-Hispanic victim(s)	-.899	.000	.407
Hispanic-only victim(s)	-1.113	.000	.329
Other non-Hispanic victim(s)	-.426	.063	.653
No aggravating circumstances	-4.202	.000	.015
One aggravating circumstance	-1.932	.000	.145
Constant	-.703	.001	.495

Number of cases = 25,648

-2 Log likelihood = 2393.20

* **Death Sentence** is coded: 0 = no death sentence, 1 = death sentence.

** All independent variables are coded: 0 = not present, 1 = present.

As our cross-classification in Table 6 showed, the number of aggravating circumstances associated with homicide incidents in California is a significant factor in death sentencing decisions. [FN143] Table 11 shows that, as expected, the effects of these aggravating factors remain even after controlling for the effects of other variables. The odds of *36 receiving a death sentence for a homicide with no aggravating circumstances are, on average, 98.5% lower [FN144] than in the case of a homicide with two aggravating circumstances. [FN145] Likewise, the odds of receiving a death sentence for a homicide with one aggravating circumstance are 85.5% lower [FN146] than for a homicide with two aggravating circumstances. [FN147]

Our results indicate that only one of the regional variables remains a significant predictor of death sentencing, controlling for the other independent variables in the logistic regression analysis. Table 11 shows that the odds of receiving a death sentence in counties where the population is less than 40% non-Hispanic white are, on average, 39.9% lower [FN148] than in counties where the non-Hispanic white population is 50% or more. The whiter the county, the higher its death sentencing rate will be.

Overall, the logistic analysis shows that the level of aggravating circumstances, the race and ethnicity of victims, and selected characteristics of counties (in particular, the racial/ethnic composition of counties) remain significant predictors of the imposition of the death sentence after controlling for each of the other independent variables.

IV. Summary and Conclusions

The results of this study are limited by the quality of the data on homicides and death penalty cases that government agencies make available. Although information available from the FBI and Death Penalty Data Set enabled us to compare early and late stages of the criminal justice decision-making process, these two data sources provided limited measures of legally relevant, extra-legal, and legally inappropriate factors that might affect death penalty decisions. Measuring all of the factors that may enter into death sentencing decisions, especially in a state as large as California, would necessitate significant funds and is far beyond the scope of our research. Nevertheless, we believe that we have measured some of the most important variables. *37 Furthermore, our findings are remarkably consistent with the results of other studies that have found race and regional effects, even after controlling for more variables than we were able to include. [FN149] Thus, we believe that even if the scope of this study were greatly expanded, the regional and victim race/ethnicity effects would not disappear and may even enlarge.

Our study also highlights broader concerns about data quality and availability of the comprehensive data that would be necessary to thoroughly monitor and evaluate criminal justice decisions. Such issues raise crucial questions about the interest and, more fundamentally, the ability of the State to monitor its death sentencing process. A comprehensive and effective monitoring program needs to track all homicide cases from arrest through appeal. To accurately assess the full range of factors that may or may not affect criminal justice decisions, all links and actors in the decision-making process must be monitored. This necessitates collecting information from the very start of the process, including information on the character of police investigations and prosecutorial charging decisions. For example, if police devote more resources to the investigation of the homicides of wealthy white victims than to other cases, and/or prosecutors modify their charging decisions in such circumstances, even if all subsequent decisions are fair, then racial and class bias will still permeate the system and potentially affect the outcome. Improper decisions made early in the process later become invisible if they are not properly documented. As a result, some cases may be pursued more vigorously “based on the evidence” when, in fact, the evidentiary collection process and/or the charging process were themselves potentially biased to an unknown and undocumented degree.

Despite these limits, the above data show strong disparities in death sentencing in California for homicides committed in the 1990s. The data clearly indicate that the race and ethnicity of homicide victims is associated with the imposition of the death penalty. [FN150] Overall, controlling for all other predictor variables, those who kill non-Hispanic African *38 Americans are 59.3% less likely to be sentenced to death than those who kill non-Hispanic whites. [FN151] This disparity increases to 67% when comparing the death sentencing rates of those who kill whites with those who kill Hispanics. [FN152] The differences are especially remarkable in cases where there was only one victim and where the homicide did not include additional felonies. [FN153] In these cases, those who kill non-Hispanic whites are 7.6 times more likely to be sentenced to death than those who kill non-Hispanic African Americans, and 11 times more likely to be sentenced to death than those who kill Hispanics. [FN154] Where one of the two identified aggravating circumstances above is present, those who kill non-Hispanic whites are still 2.28 times more likely to be sentenced to death than other homicide offenders. [FN155]

The data also show geographic variations in rates of death sentencing. Excluding counties with smaller populations, death sentencing rates vary from roughly .005% of all homicides to rates five times higher. [FN156] Those counties with the highest death sentencing rates also tend to have the highest proportion of non-Hispanic whites in their population and the lowest population density. [FN157] When the effects of all variables are considered simultaneously, death sentencing rates are lowest in counties with the highest non-white population.

Although differences in data sources and methods of measurement make precise comparisons impossible, the correlation between death sentencing and victim race/ethnicity in California is similar to patterns found in several other states where the death penalty has been studied in recent years. For example, in our study of 1696 felony-homicides accompanied by other felonies in Florida, 1976-1987, we found that those who killed whites were nearly 5 times more likely to be sentenced to death than those who killed African Americans. [FN158] In Illinois, an analysis of 4182 *39 cases in which defendants were convicted of first-degree murder between 1988 and 1997 found that “3.8% of the first-degree murder cases where the victim(s) was white resulted in a death sentence, versus 1.1% of the cases where the murder victim(s) was black, and 1.5% of the cases where the victim(s) was Hispanic.” [FN159] Thus, those who killed whites were 3.45 times more likely to be sentenced to death than those who killed African Americans. [FN160] A study of death sentencing in Nebraska between 1973 and 1999 found that among death-eligible cases in the major urban counties, 20% of those who killed whites were sentenced to death (17/84), compared to 11% of those who killed African Americans (3/28). [FN161] Similar differences have also been found by recent studies in Arizona, Maryland, North Carolina, and Philadelphia, and in studies of homicide cases under federal jurisdiction. [FN162]

Research on the issues addressed in this study could easily be expanded. A more comprehensive study would identify homicide cases in which a jury decided to reject a death sentence for a given defendant, thereby distinguishing prosecutorial behavior [FN163] from jury behavior. [FN164] More broadly, future researchers might identify all cases where defendants were eligible for the death penalty, [FN165] and distinguish them from those cases where prosecutors sought, or a jury imposed, a death sentence. Such studies could also gather more information on “special circumstances” and examine how the race/ethnicity effects are either increased or decreased when special circumstances are considered. Such data would allow *40 researchers to discover which types of cases are most strongly correlated with race and ethnic factors. The most comprehensive type of study would collect data for all discrete stages of the process, from arrest through imposition of sentence, from any potential capital case. Such a study is essential because extra-legal factors may affect decisions throughout the criminal justice legal process. For example, extra-legal factors that may affect decisions in earlier stages of the process [FN166] can become masked at later stages because they then appear to be legally appropriate factors. [FN167]

In short, the data on California homicides in the 1990s show widespread disparities in the way the death penalty is applied, and many of these inconsistencies are correlated with the homicide victim's race and ethnicity.

***41** Appendix A

Weighting of FBI Data

Table A-1 compares Vital Statistics homicide counts for 1990 through 1999 with homicide counts derived from the FBI's SHR reports. In order to align the definitions of homicide from these two data sources, justifiable homicides committed by private citizens [FN168] were added to FBI murder and non-negligent manslaughter data. The FBI program collected information on 734 justifiable homicides by private citizens in California over the period 1990 to 1999. [FN169] When added to the murder/non-negligent manslaughter counts, a total of 33,138 homicides are included in the SHR data.

***42** Table A-1

Comparison of Vital Statistics to SHR Victim Data (The Basis for Weighting SHR Data)

	1	2	3	
Race of Victim	Vital Statistics Victims [*]	SHR Criminal Homicide Victims ^{**}	Total SHR Homicide Victims ^{***}	Ratio of Column 1 to Column 3 ^{****}
White non-Hispanic	8136	7208	7357	1.1059
African American Non-Hispanic	9338	8806	9101	1.0260
Hispanic	14,089	13,630	13,868	1.0159
Other Race, non-Hispanic	2037	1417	1441	1.4136
Unknown	314	1343	1371	.2290
TOTAL	33,914	32,404	33,138	1.0234

* Vital Statistics homicide data include willful and justifiable homicides, and justifiable homicides by civilians, but excludes homicides by negligence and legal homicides by police.

** This category includes criminal homicides only. It excludes homicides by negligence, homicides by police, and justifiable homicides by private citizens.

*** This category represents FBI criminal homicides, adjusted by including justifiable homicides by private citizens in order to be comparable to the Vital Statistics definition of willful homicides and for the purpose of computing a weighting factor to adjust FBI data for underreporting.

**** This column shows the weights used to adjust the FBI offender estimates, obtained by dividing Column 1 figures by Column 3 figures.

As column one of Table A-1 shows, Vital Statistics counted 33,914 homicides in California in the 1990s--776 (2.3%) more than in the FBI data. This difference is small, and not surprising, given the fact that state laws mandate the collection of Vital Statistics death certificate data and that collection procedures have been in place for decades. [FN170] In large part, this discrepancy is probably due to a small number *43 of police departments that did not report some or all of their homicides to FBI data collection agencies.

Although the overall difference between the FBI and Vital Statistics homicide tallies is small, there are important variations in the counts on the basis of victim race/ethnicity. Vital Statistics counted 9338 non-Hispanic African American homicide victims, while the FBI data counted only 9101--a difference of 2.6%. Similarly, Vital Statistics counted 14,089 Hispanic homicide victims, versus 13,868 reported by the FBI--a difference of 1.6%. In contrast, Vital Statistics reported 8136 non-Hispanic white homicide victims, versus 7,357 counted by the FBI system--a difference of 10.6%.

The somewhat greater discrepancy between Vital Statistics and FBI estimates of non-Hispanic white victim homicides undoubtedly arises because of incomplete race/ethnicity information in the FBI data. Race/ethnicity information is missing for 1,371 (4.1%) of the FBI victims in California over the 1990-1999 period. There are missing race/ethnicity data for only 314 (.9%) of the Vital Statistics victims over the same period.

Fortunately, the problem of underreporting of FBI data in California appears to be minor. To correct the small underreporting problems in these data, we used Vital Statistics data to differentially weight (by race/ethnicity of victims) the FBI data. The last column of Appendix Table 1 reports the weights that we used to adjust the FBI data. These weights are calculated for specific categories of victim race and ethnicity. They are calculated simply as the number of homicides for a specific racial/ethnic category (estimated by Vital Statistics), divided by the comparable total number estimated by the SHR program.

*44 Appendix B

Offender Race and Ethnicity Effects

The potential effects of the defendant's race and ethnicity on the probability of receiving a death sentence can be examined with FBI data since these data include information on the race, ethnicity, age, and gender of both the victim(s) and the offender(s). [FN171] This type of information also allowed us to examine any possible effects of the offender's race/ethnicity in conjunction with the race/ethnicity of the victims.

Table B-1 presents death sentence rates by the race and ethnicity of offenders using our weighted FBI homicide offender data. The results show that when there are no controls for the race and ethnicity of homicide victims, the offender's race and ethnicity are significantly related to death sentencing decisions. [FN172] Specifically, Table B-1 shows that white offenders are more likely to receive a death sentence than offenders from other races/ethnicities. However, because most homicide incidents are intra-racial (i.e., the offender and victim are both members of the same race/ethnic group), the potential effect of the defendant's race/ethnicity on death sen-

tence rates needs to be examined in conjunction with the victim's race/ethnicity. Table B-2 shows the very strong relationship between the race/ethnicity of offenders and victims: 81.4% of the homicides with solely non-Hispanic white victims are committed by white offenders; 67.9% of homicides with solely non-Hispanic African American victims are committed by African American offenders; and 78.3% of homicides with solely Hispanic victims are committed by Hispanic offenders.

When death sentencing rates are examined for the race/ethnicity of offenders, controlling for the race/ethnicity of victims, the impact of offender's race/ethnicity largely disappears or is reversed. Table B-3 examines death sentencing rates by the race/ethnicity of offenders, controlling ***45** for the race/ethnicity of victims. Among homicides with non-Hispanic white victims, non-Hispanic African American offenders show the highest likelihood of receiving a death sentence. [FN173] For homicides with non-Hispanic African American victims, Hispanic offenders are the most likely to receive a death sentence. [FN174] Among cases with Hispanic victims, death sentences are most likely for non-Hispanic white offenders. [FN175]

In contrast, comparing death sentencing rates across categories of offender race/ethnicity shows that in five of six possible comparisons, those homicides with non-Hispanic white victims show higher death sentence rates than other victim race/ethnicity groups. [FN176] Overall, these results indicate that the race/ethnicity of victims, but not of offenders, is consistently related to death sentencing rates.

***46** Table B-1

Death Sentence Rates for Offenders by Offender Race/Ethnicity Based on Weighted SHR Offender Data

Race of Offender	SHR Offenders Weighted	Death Sentences	Death Sentence Rate per 100 Offenders	Ratio of White Offender Rate to Other Victim Race Rate
White non-Hispanic	5169	103	1.993	
African American non-Hispanic	7888	101	1.280	1.56
Hispanic	11,127	81	.728	2.74
Other race, non-Hispanic	1289	17	1.319	1.51
Total	25,473	302	1.186	

Chi Square = 49.431; df = 3; p < .001.

Table B-2

Distribution of Victim Race/Ethnicity by Offender Race/Ethnicity Based on Weighted SHR Offender Data (Multiple Race/Ethnicity Homicides Excluded; Where the Race/Ethnicity of the Offender is Unknown, the Tabulations Are Not Shown)

Race/Ethnicity of Victim	Race/Ethnicity of Offender			
	White non-Hispanic	African American non-Hispanic	Hispanic	Other non-Hispanic
White non-Hispanic	81.4	12.5	11.7	14.7
African American non-Hispanic	4.7	67.9	7.0	4.4
Hispanic	10.4	15.8	78.3	10.6
Other non-Hispanic	3.2	3.4	2.7	69.8
Unknown Race/Ethnicity	.3	.5	.2	.5
Total Cases	5169	7888	11,127	1288
Total Percent	100.0	100.0	100.0	100.0

Chi Square = 37212.601; df = 16; p < .001.

***47 Table B-3**

Death Sentence Rates for Offenders by Offender Race and Victim Race/Ethnicity Based on Weighted SHR Offender Data

Race of Defendant	Cases	Death Sentences	Death Sentences per 100 Suspects
Race of Victim:			
White non-Hispanic			
White non-Hispanic	4206	79	1.8783
African American	984	34	3.455

non-Hispanic

Hispanic	1306	25	1.914
Total	6496	138	2.1244

Chi Square = 9.885;
df = 3; p = .020.

Race of Victim:
African American non-
Hispanic

White non-Hispanic	244	0	.0000
African American non-Hispanic	5355	36	.672
Hispanic	782	7	.895
Total	6381	43	.6739

Chi Square = 2.228;
df = 3; p = .527.

Race of Victim: His-
panic

White non-Hispanic	540	10	1.8519
African American non-Hispanic	1243	7	.563
Hispanic	8715	35	.402
Total	10,498	52	.4953

Chi Square = 21.830;
df = 3; p < .001.

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[FN1]. 493 P.2d 880 (Cal. 1972), cert. denied, 406 U.S. 958 (1972).

[FN2]. See Jonathan R. Sorenson, James W. Marquart & Madhava R. Bodapati, Research Note: Two Decades After *People v. Anderson*, 24 Loy. L.A. L. Rev. 45 (1990), for research on the effects of *People v. Anderson*.

[FN3]. 408 U.S. 238 (1972). Furman was announced on June 29, 1972. Id.

[FN4]. This initiative declared that the death penalty was not “the infliction of cruel or unusual punishments within the meaning of Article I, Section 6 [of the California Constitution].” Cal. Const. art. I, § 27. For more information on the history of the death penalty in California after 1972, see Steven F. Shatz & Nina Rivkind, *The California Death Penalty Scheme: Requiem for Furman?*, 72 N.Y.U. L. Rev. 1283, 1306-17 (1997); John W. Poulos, *The Lucas Court and the Penalty Phase of the Capital Trial: The Original Understanding*, 27 San Diego L. Rev. 521, 527-42 (1990).

[FN5]. See 1973 Cal. Stat. 719, §§ 1-5 (current version at Cal. Penal Code § 190.2 (Deering 2005)). In California, prosecutors make this decision by charging “special circumstances,” which, if found at the sentencing phase of the trial, make the homicide a death-eligible case. Id. The initial list of special circumstances is found in 1973 Cal. Stat. 719, §§ 1-5. The California Supreme Court has ruled that the special circumstances “perform the same constitutionally required ‘narrowing’ function as the ‘aggravating circumstances’ or ‘aggravating factors’ that some of the other states use in their capital sentencing statutes.” *People v. Bacigalupo*, 862 P.2d 808, 813 (Cal. 1993).

However, “special circumstances” are not the same as “aggravating factors.” As Shatz and Rivkind explain, “California’s special circumstances operate at the guilt phase to define the class of death-eligible first degree murderers They should not be confused with California’s ‘aggravating circumstances,’ which operate at the penalty phase to help the jury select the penalty.” See Shatz & Rivkind, *supra* note 4, at 1291 n.39 (citation omitted). Examples of “special circumstances” in the 1973 statute include whether the victim was a police officer, whether the murder was committed to eliminate a witness, and whether the murder was accompanied by one of a specified list of accompanying felonies. See *id.* at 1307-08 n.141. “Aggravating circumstances” include the circumstances of the crime, writ large. See Cal. Penal Code §190.3 (Deering 2005); Robert M. Sanger, *Comparison of the Illinois Commission Report on Capital Punishment with the Capital Punishment System in California*, 44 Santa Clara L. Rev. 101, 109-19 (2003) (arguing that aggravating circumstances “have been interpreted so broadly that prosecutors can argue practically any case warrants the death penalty”).

[FN6]. See [Gregg v. Georgia](#), 428 U.S. 153 (1976) and accompanying cases.

[FN7]. See [Woodson v. North Carolina](#), 428 U.S. 280 (1976).

[FN8]. See [Roberts v. Louisiana](#), 428 U.S. 325 (1976).

[FN9]. [Rockwell v. Superior Court](#), 556 P.2d 1101, 1116 (Cal. 1976).

[FN10]. 1977 Cal. Stat. 316, § 9; see Shatz & Rivkind, *supra* note 4, at 1308 & n.144.

[FN11]. Initiative Measure Proposition 7 (approved Nov. 7, 1978) (codified at [Cal. Penal Code §§ 190, 190.1-.5](#) (Deering 2005)).

[FN12]. See Shatz & Rivkind, *supra* note 4, at 1311 & n.155. The Briggs Initiative broadened several special circumstances so that some non-intentional murders were eligible for the death penalty, as were accomplices. *Id.* at 1313.

[FN13]. “There are twenty-five special circumstances under the current California statutes, many with subsections, rendering over thirty-six actual circumstances in which capital punishment may be sought.” Sanger, *supra* note 5, at 108-09.

[FN14]. This was done in several ways, including expanding the felonies that can be used to find felony murder, expanding the means of murder to include, for example, discharging a firearm from a motor vehicle, and by limiting diminished capacity defenses. See Shatz & Rivkind, *supra* note 4, at 1314-15.

[FN15]. Hispanic refers to a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

[FN16]. See *infra* tbl.1a; U.S. Bureau of the Census, *Statistical Abstract of the United States: 1992*, at 24-25 (112th edition 1992).

[FN17]. See *infra* tbl.1a; U.S. Bureau of the Census, *Statistical Abstract of the United States: 2002*, at 26-28 (122nd edition 2002) [hereinafter 2002 Statistical Abstract].

[FN18]. See *infra* tbl.1b; 2002 Statistical Abstract, *supra* note 17, at 27.

[FN19]. See Fed. Bureau of Investigation, *Uniform Crime Reports, Crime in the United States--2001*, at 66-75 tbl.4 (2001), [http:// www.fbi.gov/ucr/01cius.htm](http://www.fbi.gov/ucr/01cius.htm) (last visited Oct. 5, 2005).

[FN20]. *Id.*

[FN21]. Richard Winton, *Crime Edges Up in State*, L.A. Times, Apr. 28, 2003, at B7. Los Angeles's homicide rate rose 11.1% during 2002. *Id.*

[FN22]. Cal. Ctr. for Health Statistics, *Homicide Deaths, California, 1980-1997*, at 1 (1999), [http:// www.dhs.ca.gov/hisp/chs/OHIR/reports/leadingcause/homicide1980.pdf](http://www.dhs.ca.gov/hisp/chs/OHIR/reports/leadingcause/homicide1980.pdf) (last visited Oct. 5, 2005).

[FN23]. See *id.* at 6 tbl.2.

[FN24]. *Id.* at 6.

[FN25]. Id.

[FN26]. Id.

[FN27]. The survey includes as violent crime rape/sexual assault, robbery, aggravated assault, and simple assault. Callie Marie Rennison, *Hispanic Victims of Violent Crime, 1993-2000*, at 1 (2002), <http://www.ojp.usdoj.gov/bjs/pub/pdf/hvvc00.pdf> (last visited Oct. 5, 2005).

[FN28]. Id. at 2 tbl.1.

[FN29]. NAACP Legal Defense and Educational Fund, Inc., *Death Row U.S.A.* 29-30 (2005), http://www.naacpldf.org/content/pdf/pubs/drusa/DRUSA_Summer_2005.pdf (last visited Oct. 5, 2005). The latest data published by the California Department of Corrections shows 630 people on death row as of Jan. 28, 2004. See Cal. Dep't of Corr., *Condemned Inmate Summary List*, <http://www.corr.ca.gov/CommunicationsOffice/CapitalPunishment/PDF/Summary.pdf> (Oct. 20, 2005) [hereinafter *Condemned Inmate Summary List*].

[FN30]. See *infra* tbl.2.

[FN31]. NAACP Legal Defense and Educational Fund, Inc., *supra* note 29, at 29.

[FN32]. See Death Penalty Information Center, <http://www.deathpenaltyinfo.org> (follow "Execution Database" hyperlink and search for California executions) (last visited Oct. 5, 2005).

[FN33]. See *supra* tbl.3.

[FN34]. Id.

[FN35]. Id.

[FN36]. See Death Penalty Information Center, *supra* note 32.

[FN37]. See NAACP Legal Defense and Educational Fund, Inc., *supra* note 29, at 10.

[FN38]. Id.

[FN39]. See Cal. Ctr. for Health Statistics, *supra* note 22, at 6 tbl.2.

[FN40]. See *supra* tbl.3.

[FN41]. Special Issue, *A Study of the California Penalty Jury in First-Degree-Murder Cases*, 21 *Stan. L. Rev.* 1297 (1969).

[FN42]. Id.

[FN43]. Stephen P. Klein & John E. Rolph, *Relationship of Offender and Victim Race to Death Penalty Sentences in California*, 32 *Jurimetrics J.* 33 (1991).

[FN44]. Id.

[FN45]. Id. Because prosecutors make a range of discretionary decisions before conviction, the Klein and Rolph

study is vulnerable to criticism of sample selection bias. For example, their methodology is unable to detect any racial or ethnic disparities that may result when prosecutors decide not to seek the death penalty for those accused of the murders of African American victims less frequently than for those accused of the murders of whites. Such disparities also go undetected when, having charged one or more special circumstances that make the defendant eligible for the death penalty, prosecutors later negotiate a plea agreement and thereby remove the death penalty as a possible sentence.

[FN46]. *Id.* at 34.

[FN47]. *Id.* at 45.

[FN48]. *Id.*

[FN49]. See Klein & Rolph, *supra* note 43, at 41 tbl.2.

[FN50]. *Id.* at 37.

[FN51]. *Id.*

[FN52]. For a list of factors utilized, see *id.* at 47-48 app. b.

[FN53]. *Id.* at 41 tbl.2.

[FN54]. See Klein & Rolph, *supra* note 43, at 41 tbl.2. This table reports that 352 people (330 plus 22) in the sample of 496, or 71%, were sentenced to life without the possibility of parole. *Id.*

[FN55]. *Id.* at 41.

[FN56]. The authors' model predicted a death sentence in 70 out of 144 cases in which the death penalty was actually imposed. *Id.* at 41 tbl.2 (1991).

[FN57]. For example, Klein and Rolph included measures of the offender's prior criminal record, the offender-victim relationship, and whether or not the murder involved torture. *Id.* at 47-48.

[FN58]. *Id.* at 44. This conclusion has been criticized. David Baldus and his colleagues argued that Klein and Rolph may have overlooked a statistically significant race-of-victim disparity because they used a statistical method ("CART") that could not capture the full effects of race. See David C. Baldus, George Woodworth, David Zuckerman, Neil Alan Weiner & Barbara Broffitt, [Racial Discrimination and the Death Penalty in the Post-Furman Era: An Empirical and Legal Overview, with Recent Finds From Philadelphia](#), 83 *Cornell L. Rev.* 1638, 1665-66 n.80 (1998) (criticizing the statistical analysis used in the Klein and Rolph study).

[FN59]. Richard A. Berk, Robert Weiss & Jack Boger, [Chance and the Death Penalty](#), 27 *Law & Soc'y Rev.* 89, 100-08 (1993).

[FN60]. *Id.* at 100.

[FN61]. See *id.* at 91-92.

[FN62]. *Id.* at 100.

[FN63]. *Id.* at 101-02. Because of the diversity of victims' races in the sample, the authors were unable to isolate

effects for victims' races. *Id.* at 102 n.4.

[FN64]. See Berk et al., *supra* note 59, at 106-08.

[FN65]. Raymond Paternoster, *Assessing Capriciousness in Capital Cases*, 27 *Law & Soc'y Rev.* 111, 113-14 (1993).

[FN66]. *Id.* at 119.

[FN67]. *Id.* (emphasis added).

[FN68]. *Id.* at 113-14.

[FN69]. Richard A. Berk, Robert Weiss & Jack Boger, *Rejoinder*, 27 *Law & Soc'y Rev.* 125, 126 (1993).

[FN70]. See *id.* at 125-27.

[FN71]. Robert E. Weiss, Richard A. Berk & Cathrine Y. Lee, *Assessing the Capriciousness of Death Penalty Charging*, 30 *Law & Soc'y Rev.* 607, 607-08 (1996).

[FN72]. See *id.* at 621. They found further evidence that “if the victim is white or Asian (compared to African American or Latino), the odds of a capital charge are about four times larger.” *Id.* at 619.

[FN73]. It is likely, of course, that a small number of homicide prosecutions for murders committed in the 1990s were not completed as of March 15, 2003, as on that date some defendants may still have been awaiting capital trials, and some offenders might not even have been identified or arrested yet.

[FN74]. That is, there is no reason to believe that any death sentences that may result from 1990-1999 murders that were unresolved or pending prosecution as of March 15, 2003, are correlated with the defendants' or victims' race/ethnicity.

[FN75]. See Cal. Dep't of Corr., *Death Row Tracking System: Condemned Inmate List*, <http://www.cdc.state.ca.us/CommunicationsOffice/CapitalPunishment/PDF/InmateSecured.pdf> (Oct. 20, 2005) [hereinafter *Condemned Inmate List*].

[FN76]. *Id.*

[FN77]. The California Appellate Project is a non-profit law office established by the State Bar of California that primarily assists private attorneys appointed in death penalty appeals and state habeas proceedings. See *Welcome to California Appellate Project of San Francisco*, <http://www.capsf.org/Welcomes.html> (follow “About CAP” hyperlink) (last visited Oct. 4, 2005).

[FN78]. The California Department of Corrections supplies information only for inmates currently on death row. We obtained information on former death row inmates from the California Appellate Project. This group of former inmates includes individuals who died after being sentenced to death (regardless of the cause of death) and those who had their convictions or sentences reversed and were not subsequently re-sentenced to death. See *id.*

[FN79]. For example, robbery, rape, etc.

[FN80]. See *Condemned Inmate List*, supra note 75.

[FN81]. The Supplementary Homicide Report is a reporting form for police departments, provided by the FBI's Uniform Crime Reporting Program,, "designed to collect additional details regarding the murder victim and offender, their relationship to one another, the weapon used, and the circumstances in each criminal homicide." Fed. Bureau of Investigation, *Uniform Crime Reporting Handbook* 104 (2004), <http://www.fbi.gov/ucr/handbook/ucrhandbook04.pdf> [hereinafter *Uniform Crime Reporting Handbook*].

[FN82]. See Cal. Ctr. for Health Statistics, Cal. Dep't of Health Servs., Organization, <http://www.dhs.ca.gov/hisp/chs/default.htm> (last visited Oct. 4, 2005).

[FN83]. See Nat'l Archive of Criminal Justice Data, *Learn More About the Supplementary Homicide Reports*, <http://www.icpsr.umich.edu/NACJD/SDA/shr7699d.html> (last visited Oct. 4, 2005).

[FN84]. *Uniform Crime Reporting Handbook*, supra note 81, at 104-07.

[FN85]. See *id.*

[FN86]. Fed. Bureau of Investigation, *Crime in the United States 2003: Offenses in Uniform Crime Reporting*, § VII, app. II, at 497 (2004), available at http://www.fbi.gov/ucr/cius_03/pdf/03sec7.pdf (last visited Nov. 1, 2005).

[FN87]. Bureau of Justice Statistics, U.S. Dep't of Justice, *Homicide Trends in the U.S.: Additional Information About the Data*, <http://www.ojp.usdoj.gov/bjs/homicide/addinfo.htm> (last visited Oct. 4, 2005).

[FN88]. Fed. Bureau of Investigation, *Uniform Crime Reports, Crime in the United States--2004*, http://www.fbi.gov/ucr/cius_04/offenses_reported/violent_crime/murder.html (last visited Nov. 1, 2005).

[FN89]. See generally Nat'l Ctr. for Health Statistics, Ctrs. for Disease Control & Prevention, *Mortality Data from the National Vital Statistics System*, <http://www.cdc.gov/nchs/about/major/dvs/desc.htm> (last visited Nov. 1, 2005).

[FN90]. Ctrs. for Disease Control & Prevention, *Morbidity and Mortality Weekly Report: Indicators for Chronic Disease Surveillance* (Sept. 10, 2004), <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5311a1.htm>.

[FN91]. According to the National Center for Health Statistics:

The National Vital Statistics System is the oldest and most successful example of inter-governmental data sharing in Public Health and the shared relationships, standards, and procedures form the mechanism by which NCHS collects and disseminates the Nation's official vital statistics. These data are provided through contracts between NCHS and vital registration systems operated in the various jurisdictions legally responsible for the registration of vital events--births, deaths, marriages, divorces, and fetal deaths. In the United States, legal authority for the registration of these events resides individually with the 50 States, 2 cities (Washington, DC, and New York City), and 5 territories (Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands). These jurisdictions are responsible for maintaining registries of vital events and for issuing copies of birth, marriage, divorce, and death certificates.

Nat'l Ctr. for Health Statistics, Ctrs. for Disease Control & Prevention, *National Vital Statistics System*, <http://www.cdc.gov/nchs/nvss.htm> (last visited Nov. 1, 2005).

[FN92]. See Office of Vital Records, Cal. Dep't of Health Servs., *Office of Vital Records Index Page*, <http://www.dhs.ca.gov/hisp/chs/default.htm>

[tp://www.dhs.ca.gov/hisp/chs/OVR/default.htm](http://www.dhs.ca.gov/hisp/chs/OVR/default.htm).

[FN93]. See Nat'l Ctr. for Health Statistics, Ctrs. for Disease Control & Prevention, Mortality Data from the National Vital Statistics System: International Classification of Diseases, Ninth Revision (ICD-9), <http://www.cdc.gov/nchs/about/major/dvs/icd9des.htm> (last visited Oct. 4, 2005).

[FN94]. See Nat'l Ctr. for Health Statistics, Ctrs. for Disease Control & Prevention, Mortality Data from the National Vital Statistics System: International Classification of Diseases, Tenth Revision (ICD-10), <http://www.cdc.gov/nchs/about/major/dvs/icd10des.htm> (last visited Oct. 27, 2005).

[FN95]. Office of Health Information and Research, Cal. Dep't of Health Servs., Death Profiles By Zip Code, California: 1989-2003, <http://www.dhs.ca.gov/hisp/chs/OHIR/tables/death/zipcode.htm> (last visited Oct. 27, 2005). See also Robert N. Anderson et al., Comparability of Cause of Death Between ICD-9 and ICD-10: Preliminary Estimates, 49 Nat'l Vital Stat. Rep. (No. 2, May 18, 2001), available at http://www.cdc.gov/nchs/data/nvsr/nvsr49/nvsr49_02.pdf (describing the differences between ICD-9 and ICD-10).

[FN96]. See Anderson et al., *supra* note 95; Dep't of Biomedical Informatics, Columbia Univ., Homicide and Injury Purposely Inflicted by Other Persons (E960-E969), <http://www.dmi.columbia.edu/hripcsak/icd9/1tabularE960.html>. For a list of ICD-9 codes, see EPICenter, Cal. Dep't of Health Servs., Help With ICD 9 and 10 Codes, <http://www.applications.dhs.ca.gov/epicdata/help/icd.htm#definitions> (last visited Oct. 27, 2005).

[FN97]. The FBI category of "justifiable homicide" is comparable to the ICD category of "legal intervention."

[FN98]. See *supra* notes 79-80 and accompanying text.

[FN99]. See *supra* notes 89-90 and accompanying text.

[FN100]. See discussion *infra* app. a.

[FN101]. See *id.*

[FN102]. See Office of Vital Records, *supra* note 92.

[FN103]. See *infra* tbl.4.

[FN104]. See *id.*

[FN105]. *Id.*

[FN106]. *Id.*

[FN107]. *Id.*

[FN108]. *Id.*

[FN109]. See *supra* notes 79-80 and accompanying text. Reference materials for each year of the FBI Supplementary Homicide Reports used in this study are available at Nat'l Archive of Criminal Justice Data, Inter-University Consortium for Political and Soc. Research, Uniform Crime Reporting Program Resource Guide, <http://www.icjda.org>.

[tp://www.icpsr.umich.edu/NACJD/ucr.html](http://www.icpsr.umich.edu/NACJD/ucr.html) (last visited Oct. 4, 2005).

[FN110]. See *infra* tbl.6.

[FN111]. See *supra* tbl.5.

[FN112]. *Id.*

[FN113]. See *infra* tbl.6.

[FN114]. Shatz and Rivkind, for example, argue that the most important special circumstance in California is “felony murder,” which they found in 116 **of** the 157 cases (73.9 percent) in their sample where a **death sentence** was imposed. See Shatz & Rivkind, *supra* note 4, at 1329. In our Illinois research, we found that the number **of** homicide victims remained one **of** the strongest predictors **of** a **death sentence**, controlling for other **legally** relevant and **legally** irrelevant **factors**. See Glenn L. Pierce & Michael L. Radelet, *Race, Region, and Death Sentencing in Illinois, 1988-1997*, 81 *Or. L. Rev.* 39, 95 tbl.31a (2002).

[FN115]. See *supra* tbl.6.

[FN116]. *Id.*

[FN117]. *Id.*

[FN118]. *Id.*

[FN119]. *Id.*

[FN120]. This difference is statistically significant at the .05 level.

[FN121]. See *infra* app. b, tbl.b-1.

[FN122]. See *infra* app. b, tbl.b-2.

[FN123]. See *infra* app. b, tbl.b-3.

[FN124]. A more current version of this list with data through Oct. 20, 2005, can be found by examining Condemned Inmate Summary List, *supra* note 29, and Condemned Inmate List, *supra* note 75. Interested readers can obtain the Jan. 28, 2004, list by deleting those sentenced after January 28, 2005, from the current list.

[FN125]. See *infra* tbl.7.

[FN126]. Condemned Inmate Summary List, *supra* note 29.

[FN127]. See *infra* tbl.8.

[FN128]. The current District Attorney in San Francisco, Kamala Harris, who took office in January 2004, has pledged never to seek a **death sentence**. Harriet Chiang, D.A. Defends Decision Not To Seek Execution; Her Position Has Been Clear Since Campaign, She Says, *S.F. Chronicle*, Apr. 25, 2004, at B1. Her predecessor, Terence Hallinan, never sought a **death sentence** in his eight years in office. Lee Romney & Carl Ingram, Officer's Murder Divides San Francisco; Atty. Gen. Lockyer May Step In As the D.A. Refuses to Seek **Death** in the Killing **of** a Police Officer, *L.A. Times*, May 8, 2004, at B1. Since 1979, **only** two defendants have been **sen-**

tenced to death for murders in San Francisco. **Death Sentence Upheld in San Francisco Robbery, Killing**, Metropolitan News-Enterprise (Los Angeles), Dec. 6, 2002, at 3.

[FN129]. For example, larger urban counties may have higher proportions **of** stranger-to-stranger homicides and correspondingly lower arrest rates.

[FN130]. See, e.g., William J. Bowers & Glenn L. Pierce, Arbitrariness and Discrimination Under Post-Furman Capital Statutes, 26 Crime & Delinq. 563, 601-07 (1980); Pierce & **Radelet**, supra note 114, at 65 (reporting that in Illinois, the odds **of** receiving a **death sentence** in Cook County are 83.6% lower than the odds **of** receiving a **death sentence** for a similar homicide in other areas **of** the state).

[FN131]. Other **factors** that may explain regional variations are not measured, such as the availability **of** fiscal resources necessary to pursue **death sentences**, or political differences in prosecutorial affinity for the **death** penalty.

[FN132]. See infra tbl.9.

[FN133]. 1.10 **death sentences** per 100 victims. Id.

[FN134]. 98 **death sentences** per 100 victims. Id.

[FN135]. See infra tbl.10.

[FN136]. Id.

[FN137]. As we have explained elsewhere,

[L]ogistic regression models estimate the average effect **of** each independent variable (predictor) **on** the odds that a convicted felon would receive a **sentence of death**. An odds ratio is simply the ratio **of** the probability **of** a **death sentence** to the probability **of** a **sentence** other than **death**. Thus, when one's likelihood **of** receiving a **death sentence** is .75 (P), then the probability **of** receiving a non-**death sentence** is .25 (1-P). The odds ratio in this example is .75/.25 or 3 to 1. Simply put, the odds **of** getting the **death sentence** in this case is 3 to 1.

The dependent variable is a natural logarithm **of** the odds ratio, y, **of** having received the **death** penalty. Thus, $y = P / (1 - P)$ and $(1) \ln(y) = \hat{\alpha}_0 + X\hat{\alpha}_1 + \epsilon_1$, where $\hat{\alpha}_0$ is an intercept, $\hat{\alpha}_1$ are the i coefficients for the i independent variables, X is the matrix **of** observations **on** the independent variables, and ϵ_1 is the error term.

Results for the logistics model are reported as odds ratios. Recall that when interpreting odds ratios, an odds ratio **of** one means that someone with that specific characteristic is just as likely to receive a capital **sentence** as not. Odds ratios **of** greater than one indicate a higher likelihood **of** the **death** penalty for those offenders who have a positive value for that particular independent variable. When the independent variable is continuous, the odds ratio indicates the increase in the odds **of** receiving the **death** penalty for each unitary increase in the predictor.

Pierce & **Radelet**, supra note 114, at 59.

[FN138]. The lack **of** a matching case in the SHR data set occurs because **of** either a failure **of** the police to report the homicide to the SHR reporting program or the reporting **of** a case missing several variables needed for matching.

[FN139]. Samuel R. Gross & Robert Mauro, **Death and Discrimination: Racial Disparities in Capital Sentencing** 38-39 (1989).

[FN140]. The $\text{Exp}(\beta)$ coefficient is the β coefficient expressed as an odds ratio.

[FN141]. 1.0 minus .407 equals .593, or 59.3% lower.

[FN142]. 1.0 minus .329 equals .671, or 67.1% lower.

[FN143]. See discussion supra Part III.A.

[FN144]. 1.0 minus .015 equals .985, or 98.5%.

[FN145]. See discussion supra Part III.A.

[FN146]. 1.0 minus .145 equals .855, or 85.5%.

[FN147]. See supra tbl.11.

[FN148]. 1.0 minus .601 equals .399, or 39.9%.

[FN149]. See, e.g., David C. Baldus & George Woodworth, Race Discrimination in the Administration of the Death Penalty: An Overview of the Empirical Evidence with Special Emphasis on the Post-1990 Research, 39 Crim. L. Bull. 194 (2003).

[FN150]. See discussion supra Part III.A.

[FN151]. See supra note 141 and accompanying text.

[FN152]. See supra note 142 and accompanying text.

[FN153]. See discussion supra Part III.A.

[FN154]. See supra tbl.6.

[FN155]. See discussion supra Part III.A.

[FN156]. See supra tbl.8.

[FN157]. See discussion supra Part III.B.

[FN158]. **Michael L. Radelet** & Glenn L. Pierce, Choosing Those Who Will Die: Race and the **Death** Penalty in Florida, 43 Fla. L. Rev. 1, 24 (1991). The Florida data showed that 16.2% **of** those who killed whites, and 3.3% **of** those who killed African Americans, in felony-homicides accompanied by other felonies were **sentenced to death**. Id. at 23-24.

[FN159]. Pierce & **Radelet**, supra note 114, at 62-63.

[FN160]. See id.

[FN161]. David C. Baldus, George Woodworth, Catherine M. Grosso & Aaron M. Christ, [Arbitrariness and Discrimination in the Administration of the Death Penalty: A Legal and Empirical Analysis of the Nebraska Experience \(1973-1999\)](#), 81 Neb. L. Rev. 486, 583 (2002).

[FN162]. For a review **of** these and other studies, see Baldus & Woodworth, supra note 149.

[FN163]. Prosecutorial behavior includes making the decision to seek the **death** penalty.

[FN164]. Jury behavior includes imposing **death sentences**.

[FN165]. Under current law, a defendant is eligible for the **death** penalty if he or she is convicted of first-degree murder with special circumstances. [Cal. Penal Code § 190.2](#) (Deering 2005).

[FN166]. For example, a prosecutor's racially-biased decision to charge a defendant whose victim is white with an accompanying felony, but not if the victim were a non-Hispanic African American, may affect the outcome of the case.

[FN167]. Future studies should also examine the possibility of gender effects.

[FN168]. The data about justifiable homicides committed by private citizens to which this refers are collected by the FBI Supplementary Homicide Reporting System, but not included in the official FBI homicide statistics.

[FN169]. See The National Archive of Criminal Justice Data Home Page, <http://www.icpsr.umich.edu/NACJD/> (last visited Nov. 1, 2005), which provides reference materials and data for each year of the FBI Supplementary Homicide Reports used in this research.

[FN170]. See supra note 90 and accompanying text.

[FN171]. See The National Archive of Criminal Justice Data Home Page, supra note 169.

[FN172]. See infra app. b, tbl.b-1.

[FN173]. See infra app. b, tbl.b-3.

[FN174]. See id.

[FN175]. See id.

[FN176]. See id. col. 3. The six comparisons are as follows: non-Hispanic white defendant and victim versus (1) non-Hispanic African American victim (1.8783 v. 0) and (2) Hispanic victim (1.8783 v. 1.8519, which is not significant); non-Hispanic African American defendant and non-Hispanic white victim versus (3) non-Hispanic African American victim (3.455 v..672) and (4) Hispanic victim (3.455 v..563); Hispanic defendant and non-Hispanic white victim versus (5) non-Hispanic African American victim (1.914 v..895) and (6) Hispanic victim (1.914 v..402).

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