The Impact of Legally Inappropriate Factors on

Death Sentencing for California Homicides, 1990-99

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Abstract

This paper examines California homicides committed between January 1, 1990, and December 31, 1999, and attempts to identify which homicides are most likely to end with a death sentence. We measure homicides with two different data sets: 1) police data, reported to the FBI as "Supplemental Homicide Reports" (which also give information on the number of victims in the case and whether it included additional felonies), and 2) Vital Statistics data, which give more accurate counts of homicides but not as much information on each case. We use the latter source to adjust or correct the former source. We find that those suspected of killing non-Hispanic whites are more likely to be sentenced to death than other homicide suspects. These differences persist even when we statistically control for levels of aggravation.

The data also show clear regional disparities in death sentencing, with counties that have a lower population density and a higher proportion of non-Hispanic whites in their populations to have the highest rates of death sentences.

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This paper 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 that state's death row when it decided *People v. Anderson*.[1] The court based its decision on the State Constitution's ban on cruel or unusual punishments. The sentences of all 107 inmates then on California's death row were automatically commuted to life imprisonment.[2] Four months later, the United States Supreme Court's landmark death penalty ruling in *Furman v. Georgia*[3] 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.[4] 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

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[1] 493 P.2d 880 (Cal. 1972), *cert. denied*, 406 U.S. 958 (1972).

[2] Jonathan R. Sorenson, James W. Marquart, & Madhava R. Bodapati, *Research Note: Two Decades After* People v. Anderson, 24 LOYOLA OF LOS ANGELES L. REV 45 (1990).

[3] 408 U.S. 238 (1972). *Furman* was announced on June 29, 1972.

[4] This initiative declared that the death penalty was not "the infliction of cruel or unusual punishment within the meaning of Article I, Section 6 [of the California Constitution]." CAL. CONST. art. I, § 27 (1972). For more information on the history of the death penalty in California after 1972, *see* Steven F. Shatz & Nina Rivkind, *The California Death Penalty: Requiem for* Furman? 72 NYU 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. 521 527-542 (1990).

of ten statutorily defined "special circumstances."[5] However when the U.S. Supreme

Court approved several new death penalty statutes in 1976,[6] it also invalidated the

mandatory death penalty statutes of North Carolina[7] and Louisiana.[8] As a result of the

latter decisions, in late 1976 the California Supreme Court invalidated that state's

mandatory death penalty law.[9]

The California legislature responded by passing a new death penalty statute in

1977, which gave jurors the discretion to decide whether defendants should be sentenced

to death.[10] 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.[11] 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

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[5] *See* [statute referred to in text]. 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. 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.

[6] *See generally* Gregg v. Georgia, 428 U.S. 153 (1976) and accompanying cases.

[7] *See generally* Woodson v. North Carolina, 428 U.S. 280 (1976).

[8] *See generally* Roberts v. Louisiana, 428 U.S. 325 (1976).

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

[10] 1977 Cal. Stat. 316, § 9; *see* Shatz & Rivkind, *supra* note 4, at 1308, n. 144.

[11] Initiative Measure Prop. 7 (approved Nov. 7, 1978).

older ones to allow prosecutors much more latitude in pursuing the death penalty.[12]

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.[13] The

definition of first-degree murder has also been broadened, further expanding the potential

applicability of the death penalty in California.[14]

b. Demographics and Homicides in California

California's population is among the most ethnically and racially diverse in the

United States. Table 1 shows that the Hispanic population[15] of the state increased from

approximately one-fourth of the total state population in 1990[16] to just under one-third by

2000.[17] When race alone is measured (regardless of ethnicity), the African American

population was 6.7 percent in 2000, with whites constituting 59.5 percent of the

population and Asians/Others approximately 33.8 percent.[18]

Table 1
Hispanic Population – California
1990 and 2000
(total population in parentheses)

	1990	2000

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[12] *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.

[13]("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."). Robert M. Sanger, *Comparison of the Illinois Commission Report on Capital Punishment with the Capital Punishment System in California,* 44 SANTA CLARA LAW REVIEW 101, 108-09 (2003).

[14] Shatz & Rivkind, *supra* note 4, at 1313-14.

[15] Hispanic refers to a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race. *See* U.S. Bureau of Census, *Statistical Abstract of the United States: 1992* (112th edition), at 24-25.

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

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

[18] *Id.*; U.S. Bureau of Census, *Statistical Abstract of the United States: 2002* (122th edition), at 26-28.

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

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.[19] In 2001, there were 2,206 homicides and non-negligent manslaughters in California, followed by 1,332 in Texas, 986 in Illinois, 960 in New York, and 874 in Florida.[20] With 653 homicides in 2002, Los Angeles recorded more homicides than any city in the country.[21]

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[19] Federal Bureau of Investigation, UNIFORM CRIME REPORTS, CRIME IN U.S. – 2001, Table 4. Available from <http://www.fbi.gov/ucr/01cius.htm>

[20] *Id.*

[21] Richard Winton, *The Homicide Rate in California's Biggest Cities Increased Nearly 11% in 2002, and Major Crimes Rose 3.8 %, Lockyer Says*, LOS ANGELES TIMES, Apr. 28, 2003, at II-7.

California health statistics reveal that the risk of homicide victimization varies significantly by gender, race, and ethnicity. They show that between 1980 and 1997 that males were approximately four times more likely than females to fall victim to homicide.[22] From 1985 through 1997, there was an annual average of 1,285 Hispanic homicide victims, 1,007 African Americans, 946 whites, and 184 homicide victims of Asians or "other" races. During that thirteen-year period, there were 44,483 homicide victims counted by the California Department of Health Services, of whom 37.6 percent (16,704) were Hispanic, 29.4 percent (13,090) were African American, 27.6 percent (12,293) were white, and 5.4 percent (2,396) were Asian/other.[23]

By a wide margin African Americans have the highest crude homicide death rate per 100,000 population.[24] 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 Asians/other victims, and 5.6 for white victims.[25] 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[26] per 1,000 population, compared to 27.9 for Hispanics, 26.5 for whites, and 8.4 for Asians.[27]

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[22] California Center for Health Statistics, *Homicide Deaths, California, 1980-1997* (Report Register No. DS99-07000, July 1999), at 1.
[23] *Id*. at 6.
[24] *Id*.
[25] *Id*.
[26] This includes rape/sexual assault, robbery, aggravated assault, and simple assault.
[27] Callie Marie Rennison, *Hispanic Victims of Violent Crime, 1993-2000*, Bureau of Justice Statistics Report NCJ 191208 (April 2002), available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/hvvc00.pdf>.

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.[28] The race/ethnic composition of this population is presented in Table 2.[29] Note from Table 1 that the 2000 California population was 6.7 percent African American and 33.8 percent Asian; in contrast the breakdown of homicide victims in Table 1, the racial makeup of California's death row in July 2005 was 36 percent African American and only 3 percent Asian.[30] 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.

Table 2

Racial Breakdown of California Death Row Inmates
July 1, 2005
(N=648)[31]

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

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[28] NAACP Legal Defense and Educational Fund, Inc. *Death Row, U.S.A.* 31 (Summer 2005) (unpublished manuscript). The latest data published by the California Department of Corrections shows 630 people on death row as of Jan. 28, 2004. See <http://www.corr.ca.gov/CommunicationsOffice/CapitalPunishment/PDF/2003-04Summary.pdf> (last visited Feb. 21, 2005).

[29] *See infra* tbl. 2.

[30] *See infra* tbl. 2.

[31] NAACP Legal Defense and Educational Fund, Inc. *Death Row, U.S.A.* 31 (Summer 2005) (unpublished manuscript); < http://www.naacpldf.org/content/pdf/pubs/drusa/DRUSA_Summer_2005.pdf >

Between 1972 and September 15, 2005, California had eleven executions. The names of those executed, the date of execution, the number of victims they were convicted of murdering, and the race of defendant and his victim(s) is displayed in Table 3.[32]

Table 3

Executions in California, 1972-September 15, 2005 (N=11)

Date	Name	Def. Race/Ethnicity & Vic. 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

*Consensual
** Foreign National

	White Victim	Asian Victim	Hisp.Victim
White Defendant	7	-	1
African American Defendant	1	-	-
Native American Defendant	1	-	-
Asian Defendant	-	1	-

The table shows there were seven white defendants executed, one African American, one Hispanic, one Asian, and one Native American.[33] Of the eleven, nine were convicted of

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[32] *See infra* tbl. 3.

killing non-Hispanic whites, one an Asian, and one a Hispanic. Seven (63.6 percent) of those executed were convicted of multiple murders.[34] Two (18 percent) dropped their appeals and asked to be executed.[35] Seven white inmates, one African American inmate, and one Native American inmate were executed for killing whites.[36] One white inmate was executed for killing three Hispanics, and one Asian was executed for killing two other Asians.[37] Despite the California Health Department data indicating that just 27.6 percent of the murder victims in the state are white[38], 82 percent (9) of those executed were put to death for killing whites.[39] While one cannot generalize from eleven cases, the pattern raises the question of whether race of victim 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.

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.[40] 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

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[33] *See supra* tbl. 3.

[34] *Id*.

[35] *See* <http://www.deathpenaltyinfo.org/getexecdata.php>

[36] NAACP Legal Defense and Educational Fund, Inc. *Death Row, U.S.A.* 31 (Summer 2005) (unpublished manuscript); < http://www.naacpldf.org/content/pdf/pubs/drusa/DRUSA_Summer_2005.pdf >; *See also* discussion *supra* note 28.

[37] *Id*.

[38] *See supra* note 22.

[39] *See supra* tbl. 3.

[40] Charles J. Judson, James J. Pandell, Jack B. Owens, James L. McIntosh, & Dale L. Matschullat, *A Study of the California Penalty Jury in First-Degree Murder Cases*, 21 STANFORD L. REV. 1297 (1969).

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, with

"blue-collar" defendants much more likely to be sentenced to death than those from

"white-collar" backgrounds.[41]

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.[42]

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.[43] 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.[44] Thus,

Klein and Rolph's research focused only on penalty trial sentencing decisions, almost all

of which are made by juries.[45] These cases were from Los Angeles County and began

with homicides committed on August 10, 1977 (the date that California's death penalty

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[41] *Id*.

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

[43] *Id*.

[44] 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 or when, having charged one or more special circumstances that make the defendant eligible for the death penalty, they later negotiate a plea agreement and thereby remove the death penalty as a possible sentence.

[45] *Id*.

statute took effect).[46] Only defendants under a sentence of death or life without parole on March 1, 1984 were included in the sample.[47] In the end, 352 inmates (71 percent) were sentenced to life without parole, and 144 (29 percent) were sent to death row.

Klein and Rolph's analysis divided the cases into white and non-white victims and defendants, omitting further racial/ethic distinctions.[48] Initially they found a small race-of-victim difference. Thirty-two percent of those with white victims sentenced to death compared to twenty-three percent of those who were convicted of murdering nonwhites.[49]

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. The model correctly predicted the sentence in 81 percent of the cases in the sample.[50] Because 71 percent of defendants in the sample were sentenced to life without parole, however, the model increased predictability only slightly.[51] Of the 144 defendants sentenced to death, the authors' model predicted a death sentence in less than half (70) of the cases.[52] Upon statistically controlling for legally relevant variables,[53] the authors concluded that neither the victim's nor the defendant's race had any impact on death sentencing.[54]

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[46] *Id*. at 45.
[47] *Id*.
[48] *Id.* at 37.
[49] *Id.*
[50] *Id.,* at 41, Table 2.
[51] *Id.* at 41.
[52] *Id.*
[53] 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.
[54] This conclusion has been criticized; Klein and Rolph overlooked a statistically significant race-of-victim disparity and used a statistical method ("CART") that understated the race effects. *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).

The study went on to make an unsupported generalization claiming that its findings apply to the entire state: "We find that in California, sentencing is fairly predictable (rather than arbitrary), and is not systematically related to victim or defendant race."[55] However, given several studies from other states identifying significant geographic disparities in the imposition of death sentences,[56] generalization of the results from one county in a given state to an entire state is dubious.

A study by Richard Berk, Robert Weiss and Jack Boger examined 363 homicides (excluding vehicular homicides) from San Francisco County, 1978-1988.[57] 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).[58] The researchers were more interested in the consistency (or inconsistency) of prosecutorial decisions than in race.[59] While the study made no attempt to identify which cases were the most death-eligible, its data revealed that special circumstances were charged in 27 of the 363 cases (7.4 percent).[60] After statistically controlling for 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 the odds of being charged with special circumstances were 4.8 times higher for white defendants than defendants of

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[55] Klein & Rolph, *supra* note 42, at 44.

[56] *See, e.g.,* William J. Bowers & Glenn L Pierce, *Arbitrariness and Discrimination Under Post-Furman Capital Statutes*, 26 CRIME & DELINQ. 563, 601-07 (1980); Raymond Paternoster, *Race of Victim and Location of Crime: The Decision to seek the Death Penalty in South Carolina*, 74 J. CRIM L. & CRIMINOLOGY 754 (1983); Glenn L. Pierce & Michael L. Radelet, *Race, Region, and Death Sentencing in Illinois, 1988-1997*, 81 OREGON LAW REVIEW 39, 65 (2002); 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, 623-42 (2002).

[57] Richard A. Berk, Robert Weiss, & Jack Boger, *Chance and the Death Penalty*, 27 LAW & SOCIETY REVIEW 89 (1993).

[58] *Id*. at 91.

[59] *Id*.

[60] *Id*. at 100.

other races, and 3.66 times higher for those who killed women rather than men.[61]

Overall, the study concluded that there is substantial capriciousness in the prosecutors'

charging decisions.[62]

Raymond Paternoster challenged this conclusion, arguing that the Berk, Weiss

and Boger data showed a "rough consistency" in the processing of homicide

defendants.[63] He noted that more culpable defendants generally have increased odds of

being charged with special circumstances[64] and concluded that:

> There 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.[65]

Instead of substantial capriciousness, Paternoster argued that the unexplained

variance in charging decisions could be a product of variables not measured by the

researchers.[66] 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.[67] In the end, the authors suggested that their disagreement boils

down to a question of what sorts of capriciousness are acceptable.[68]

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

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[61] *Id.*, at 101. Because of the diversity of victims' races in the sample, the authors were unable to isolate effects for victims' races. *Id.*, at 102, note 4.
[62] *Id.*, at 106.
[63] Raymond Paternoster, *Assessing Capriciousness in Capital Cases*, 27 LAW & SOCIETY REVIEW 111 (1993).
[64] *Id.* at 119.
[65] *Id.*, at 119.
[66] *Id.* at 113-114.
[67] Richard A. Berk, Robert Weiss, & Jack Boger, *Rejoinder*, 27 LAW & SOCIETY REVIEW 125 (1993).
[68] *Id.*

1986 through 1993. They concluded that about two-thirds of the variation in charging could be explained; the remaining one-third was random or capricious.[69]

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 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.[70] We believe that any unconsidered death penalty cases for murders committed during the 1990s will not affect our ultimate conclusions.[71]

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 row data set. We began with a small data base compiled by the California Department of Corrections.[72] 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

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[69] Robert E. Weiss, Richard A. Berk, & Cathrine Y. Lee, *Assessing the Capriciousness of Death Penalty Charging*, 30 LAW & SOCIETY REVIEW 607 (1996). 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.

[70] 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.

[71] That is, there is no reason to believe that any death sentences that may result from 1990-99 murders that were presently unresolved or pending prosecutions as of March 15, 2003, are correlated with the defendants' or victims' race/ethnicity.

[72] *See* <http://www.cdc.state.ca.us/CommunicationsOffice/capitalpunishment/>

county of commitment. We also obtained information from a private data base

maintained by the California Appellate Project in San Francisco.[73] 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.[74] The California Appellate

Project's files 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.[75]

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. In some cases, we found a picture of the victim or a

newspaper article that clearly identified 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,

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[73] *See* <http://www.capsf.org/Welcome5.html>. The California Appellate Project is a non-profit law office established by the State Bar of California which primarily assists private attorneys appointed in death penalty appeals and state habeas proceedings.

[74] That is, 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 includes individuals who died after being sentenced to death (regardless of the cause of death) and those who had their convictions or sentences reversed, but were not subsequently re-sentenced to death.

[75] For example, robbery, rape etc.

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 39 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, 1990-1999, from two sources: The Federal Bureau of Investigation's (FBI) Supplemental Homicide Reports (SHR), and homicide data from death certificates collected by the Office of Vital Statistics, a subset of the California Department of Health Statistics.[76] 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.

i. Supplemental Homicide Reports

Supplemental 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.[77] 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, weapon used; and information on whether the homicide was accompanied by additional

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[76] *See* <http://www.dhs.ca.gov/hisp/chs/chsindex.htm>
[77] *See* <http://www.icpsr.umich.edu/NACJD/SDA/shr7699d.html>

felonies (e.g., robbery or rape).[78] Local law enforcement agencies usually report these

data long before the defendant has been convicted, so offender data are for "suspects,"

not convicted offenders.[79] The FBI defines murder and non-negligent manslaughter[80] as:

> [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.)*"[81]

As the Bureau of Justice Statistics notes, "[t]he 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."[82]

ii. Office of Vital Statistics

Vital Statistics mortality data are also collected nationally as part of mandatory

reporting program.[83] 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, the Federal compilation of this data, is the result of the cooperation between the National Center for Health Statistics (NCHS) and the States to provide access to statistical information from death certificates. Standard forms for the collection of the data and model procedures for the uniform registration of the events are developed and recommended for State use through cooperative activities of the States and NCHS.[84]

Thus, because state law mandates data their collection, Vital Statistics data are an

excellent source of information for deaths caused by homicide. They are also a more

comprehensive source of data than the inconsistent or incomplete FBI data.

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[78] *Id*.

[79] *Id*.

[80] For example homicide. *See infra* note 81.

[81] *See* <www.ocjc.state.or.us/county.htm> (italics in original).

[82] *See* <www.ojp.usdoj.gov/bjs/homicide/addinfo.htm>

[83] *See* <www.cdrewu.edu/rcmi/Site/GIS/data/mortality.htm>

[84] *See id*.

A state's department of public health or equivalent agency typically collects

mortality data. In California, the designated agency is the Department of Health

Services.[85] The California Department of Public Health defined "homicide" according to

the International Classification of Disease's ninth revision (ICD9) definition for the years

1990 to 1998[86] and the International Classification of Disease's tenth revision (ICD10)

for 1999.[87] Under both classification systems, "homicide" includes death from injuries

inflicted with intent to injure or kill, by any means, but excludes injuries due to legal

intervention (ICD9 codes E970-E978), and operations of war (ICD9 codes E990-E999).[88]

iii. 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[89] by both law enforcement officers and non-law

enforcement civilians (hereafter referred to as "private citizens"). Thus, NCHS include a

relatively small number 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. Because the FBI

data give some details about the homicide, it is particularly valuable for estimating the

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[85] *See* <http://www.dhs.ca.gov/hisp/chs/OVR/default.htm>
[86] *See* <http://www.cdc.gov/nchs/about/otheract/icd9/abticd9.htm>
[87] *See* Anderson, R. et. al., " Comparability of Cause of Death Between ICD-9 and ICD-10: Preliminary Estimates" National Vital Statistics Reports, Vol. 49, No. 2 May 18, 2001.
[88] *See* <http://www.dmi.columbia.edu/hripcsak/icd9/1tabularE960.html> and Anderson, R. et. al., " Comparability of Cause of Death Between ICD-9 and ICD-10: Preliminary Estimates" National Vital Statistics Reports, Vol. 49, No. 2 May 18, 2001.
[89] Which is comparable to the IDC category of legal intervention.

number of defendants who might be the target of death penalty prosecutions.[90] On the

other hand, Vital Statistics homicide data provides 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. In the end, the availability of data from these two sources allowed us

cross validate homicide information obtained from each.[91]

To refine the accuracy of the data on estimated numbers of offenders obtained

from FBI data, we adjusted the FBI data using Vital Statistics data on homicide victims.

This procedure allows us to correct for some small underreporting of homicides in the

FBI data, as well as for missing data on race/ethnicity.[92] 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. As such, they can be used to calculate

probabilities of death sentences for different race and ethnic categories of homicide

victims. Table 4[93] presents the probabilities for different categories of race and ethnicity

by using 1990-99 Vital Statistics victim data to show that death sentences in California

are rarely given: less than one percent of all homicides result in a death sentence. While

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[90] *See* <http://www.dmi.columbia.edu/hripcsak/icd9/1tabularE960.html>
[91] *See* discussion regarding weighting of data, *infra* Appendix A.
[92] *See infra* Appendix A.
[93] *See infra* tbl. 4.

the overall number of death sentences is low (302), there are glaring differences in the rate of death sentences across categories of victims' race/ethnicity.[94] Defendants convicted of killing non-Hispanic white victims receive the death penalty at rate of 1.75 per 100 hundred victims,[95] compared to a rate of .47 for defendants convicted of killing non-Hispanic African American victims.[96] Thus, homicides involving non-Hispanic white victims are 3.7 times more likely to in a death sentence than those with non-Hispanic African American victims.[97] The death sentencing rate for those with Hispanic victims is .369, which is 4.73 times lower than among those suspected of killing non-Hispanic whites.[98]

Table 4
Death Sentence Rates per 100 Victims and Inter Group Ratios
(Vital Statistics Data)

Race/Ethnicity Victim	Vital Statistics Victims	Defendants Sentenced To Death	Death Sent. Rate Per 100 Victims	Ratio of White Victim/Other Victim Rate
White non-Hispanic	8,136	142	1.745	----
African Amer. non-Hispanic	9,338	44	0.471	3.70
Hispanic	14,089	52	0.369	4.73
Other race, non-Hispanic	2,037	25	1.227	1.42
Multiple Race/ Ethnicity Incidents		39		
Unknown	314			

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[94] *Id.*
[95] *Id.*
[96] *Id.*
[97] *Id.*
[98] *Id.*

TOTAL	33,914	302	0.890

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., non-Hispanic white, non-Hispanic African American, Hispanic, and other race, non-Hispanic).

We now shift attention to the FBI's Supplemental 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).[99] 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[100] and 6[101] use FBI 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 sentence 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.[102] The latter information enables us to develop measures of the potential aggravating circumstances associated with homicide incidents contained in the FBI data.

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[99] Reference materials for each year of the FBI Supplementary Homicide Reports used in this study are available at: <http://www.icpsr.umich.edu/NACJD/ucr.html>
[100] *See infra* tbl. 5.
[101] *See infra* tbl. 6.
[102] *Id.*

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 Victim	SHR Offenders	Offenders Sentenced to Death	Death Sent. Rate Per 100 Offenders	Ratio –White Victim /Other Victim Rate
White non-Hispanic	6,775	142	2.096	----
African Amer. non-Hispanic	6,484	44	0.679	3.09
Hispanic	10,749	52	0.484	4.33
Other race, non-Hispanic	1,667	25	1.500	1.40
TOTAL	25,675	263		

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

Tables 5[103] and 6[104] present death sentence rates by the race and ethnicity of

victims using weighted FBI homicide offender data. Table 5 shows that 2.1 percent of

the offenders suspected of killing non-Hispanic whites were sentenced to death,

compared to .68 percent of those suspected of killing non-Hispanic African American,

.48 percent of those suspected of killing Hispanics, and 1.5 percent of those suspected of

killing non-Hispanics of other races.[105] 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.[106] The Chi-Square figure

tells us that the probability of obtaining these results by chance is less than 1 out of

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[103] *See supra* tbl. 5
[104] *See infra* tbl. 6
[105] *See supra* tbl. 5
[106] *Id*.

1,000.[107] Therefore, the data in Table 5 give further support to the hypothesis that death

sentencing is 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 victims Hispanics and non-whites. Table 6 tests

this hypothesis.[108] 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.[109] If homicides that victimize whites are indeed

more aggravated than other homicides, death sentencing rates will be similar across each

category of victims 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 Sentence 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 Sentence database 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. These two types of circumstances are among the most common set of

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[107] *Id*.
[108] *See infra* tbl. 6.
[109] *Id*.

aggravating circumstances used by prosecutors, jurors, and judges to justify death sentences.[110]

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 Sent. Rate Per 100 Offenders	Ratio –White Victim /Other Victim Rate
Part a. With No Aggravating Circumstances				
White non-Hispanic	4,775	37	0.775	---
African Amer. non-Hispanic	4,909	5	0.102	7.60
Hispanic	8,576	6	0.070	11.07
Other race, non-Hispanic	1,127	5	0.444	1.75
TOTAL	19,387	53		

For data in Part a, Chi Square = 63.560; df=3; p < .001.

Part b. With One Aggravating Circumstance				
White non-Hispanic	1,930	88	4.560	---
African Amer. non-Hispanic	1,501	30	1.999	2.28
Hispanic	2,085	33	1.583	2.88
Other race, non-Hispanic	503	16	3.181	1.43
TOTAL	6,019	167		

For data in Part b, Chi Square = 37.433, df=3; p < .001.

Part c. With Two Aggravating Circumstances				
White non-Hispanic	70	17	24.286	---
African Amer. non-Hispanic	74	9	12.162	2.00

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[110] 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 ??, 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* Pierce & Radelet, *supra* note ??, at 95, Table 31a (where multiple murders are measured by the variable "VCCNTT4").

Hispanic	88	13	14.773	1.64
Other race, non-Hispanic	37	4	10.811	2.25
TOTAL	269	43		

For data in Part c, Chi Square = 5.230; df=3; p=.156. 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 the cases of 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.[111] Where there are no aggravating circumstances in existence, 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.[112] Where there is one aggravating circumstance present, those who kill non-Hispanic whites are 2.28 times more likely to be sentenced to death than those who kill non-Hispanic African Americans.[113] Where two aggravating circumstances exist, the difference is 2.00. 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. Thus, among homicides with two 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).[114]

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[111] *See supra* tbl. 6.
[112] *Id.*
[113] *Id.*
[114] This difference is statistically significant at the .05 level.

Appendix B contains further analysis focusing on the race of the defendant.[115] This analysis shows that overall, non-Hispanic white defendants are more likely than other murder suspects to be sentenced to death.[116] 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. The effect 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. In the end, the race-of-defendant relationship 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.[117] These counties and the number of current death row inmates they sentenced are listed in Table 7.[118] By far the county with the highest number of death sentenced inmates is Los Angeles, with almost four times as many death row inmates as any other county in the state.[119]

Table 7
Top Ten Death-Sentencing Counties
(Measured by Number of Inmates on Death Row, 1-28-04)[120]

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[115] *See infra* Appendix B.

[116] *See infra* Appendix B, tbl. 1.

[117] <http://www.cdc.state.ca.us/communicationsoffice/capitalpunishment/PDF/2003-04Summary.pdf>

[118] *See infra* tbl. 7.

[119] *Id*.

[120] Source: <http://www.corr.ca.gov/CommunicationsOffice/CapitalPunishment/PDF/2003-04Summary.pdf>

County	Number of Inmates on Death Row, Jan. 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.[121] In almost half the counties – twenty-eight of the fifty-eight (48.3 percent) – no death sentences were returned for homicides in the 1990s.[122] However, these twenty-eight counties accounted for just five percent of the homicides in the state. The only county with over 100 homicides and no death sentences was San Francisco.[123]

Table 8
Homicides and Death Sentences By County of Venue

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[121] *See infra* tbl. 8.

[122] *See infra* tbl. 8.

[123] 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 sentenced 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.

(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	2,010	15	.0075
Fresno	993	8	.0081
Merced	119	1	.0084
STATE AVERAGE	**33,914**	**302**	**.0089**
San Bernardino	2,015	20	.0099
Madera	101	1	.0100
Alameda	1,773	18	.0102
Butte	95	1	.0105
Tulare	285	3	.0105
Imperial	93	1	.0108
Monterey	325	4	.0123
San Mateo	232	3	.0129
Sacramento	1,081	14	.0130
Kern	661	10	.0151
Orange	1,433	23	.0161
Santa Clara	653	12	.0184
Stanislaus	317	6	.0189
Sonoma	146	3	.0205
Riverside	1,310	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
Plumes	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

*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 rations do not take into consideration variations in arrest rates across

counties.[124] 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 use weighted FBI/SHR offender data (versus the Vital Statistics victim data 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.[125] 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 counties and the proportion of a 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 of studies of capital punishment.[126] 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

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

[126] *See, e.g.,* Bowers & Pierce, *supra* note ??, at 601-07; Pierce & Radelet, *supra* note ??, at 65 (reporting that in Illinois, the odds of receiving a death sentence in Cook County are 83.6 percent lower than the odds of receiving a death penalty for a similar homicide in other areas of the state).

offender estimates are tabulated by county of trial, since these locales are where sentencing decisions are made.[127]

Table 9[128] presents a cross-classification of death sentencing rates and the population density of California counties.[129] 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 1,000 or more inhabitants per square mile.[130] Table 9 shows that in counties with a low population density, there are 1.71 death sentences per 100 homicides.[131] Death sentencing rates are lower for counties with a population of between 300-999 per square mile,[132] and are the lowest for densely populated counties.[133] 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	6,181	106	1.71
300-999	2,450	27	1.10
1000 and over	17,304	169	.98
Total	25,934	302	1.16

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[127] 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.

[128] *See infra* tbl. 9.

[129] *Id*.

[130] *See id*.

[131] *See id*.

[132] 1.10 death sentences per 100 victims.

[133] .98 death sentences per 100 victims.

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

Table 10 shows that death sentencing rates are also related the racial makeup of California counties.[134] 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 percent and above), death sentencing rates are also the highest (1.75 death sentences per 100 homicides).[135] Where the non-Hispanic white population is lowest (under 40.0 percent of the total county population), the death sentencing rate is also the lowest (.77 death sentences per 100 homicides).[136]

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 40.0%	13,162	102	.77
40.0 to 49.9%	5,990	81	1.35
50.0% and over	6,782	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 high proportion of*

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[134] *See infra* tbl. 10.
[135] *See id.*
[136] *Id.*

non-Hispanic white residents. The more white, and the more sparsely populated the county, the higher the death sentencing rate.

c. Logistic Regression Analysis[137]

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 Sentence 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 three hundred inhabitants per square mile, 300 to 999 inhabitants, and 1,000 and over inhabitants), 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

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[137] As we have explained elsewhere, "Logistic 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) $\ln(y) = â_o + Xâ + \_i$ where $â_o$ is an intercept, $â_i$ are the i coefficients for the i independent variables, X is the matrix of observations on the independent variables, and $\_i$ is the error term. Results for the logistics model are reported as odds ratios. Recall that when interpreting odds ratios, and odds ratio of 1 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 ??, at 59.

consequently, we deleted that case (a homicide with one Hispanic victim).[138] This
reduced the 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."[139]

Finally, we weighted the merged FBI/SHR offender and Death Sentence 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-weighing unnecessary. These 262 cases were therefore assigned a weight of
"one."

Table 11 presents the results of the logistic regression analysis.[140] The
independent variables are all entered into the analysis as dichotomous measures. Thus,
where there was 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

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[138] 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 reporting a case with several variables missing that are
needed for matching.

[139] SAMUEL R. GROSS & ROBERT MAURO, DEATH AND DISCRIMINATION: RACIAL DISPARITIES IN CAPITAL
SENTENCING 38-39 (1989).

[140] See infra tbl. 11.

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 percent. Counties where 50 percent 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 dichotomous variables for counties with population densities of 1,000 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 use the exponentiated value of the Beta (ß) coefficient, which is the logistic regression beta coefficient, Exp(ß).[141] The Exp(ß) coefficients in Table 11 shows that the odds of receiving a death sentence for killing a African American non-Hispanic victim(s) decease by a factor of .407, controlling on the other independent variables.[142] 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 percent lower

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[141] The Exp(ß) coefficient is the ß coefficient expressed as an odds ratio.
[142] *See infra* tbl. 11.

than those homicides with non-Hispanic white victims[143] 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

percent lower[144] compared to homicide incidents with non-Hispanic white victims. Both

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 homicide.

Table 11

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

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

Number of cases = 25,648

-2 Log likelihood = 2393.20

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[143] 1.0 minus .407 = .593 or 59.3 percent lower.
[144] 1.0 minus .329 = .671 or 67.1 percent lower.

* Death Sentence is coded as 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 sentence decisions.[145] Table 11 shows that, as expected, the effects of these aggravating factors remain even after controlling for the effects of other variables.[146] The odds of receiving a death sentence for homicides with no aggravating circumstances are, on average, 98.5 percent lower[147] than in the case of a homicide with two aggravating circumstances.[148] Likewise, the odds of receiving a death sentence for homicides with one aggravating circumstance are 85.5 percent lower[149] than for homicides with two aggravating circumstances.[150]

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 percent non-Hispanic whites are, on average, 39.9 percent lower[151] than in counties where non-Hispanic white population is over 50 percent or more of the population. The whiter the county, the higher its death sentencing rate.

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[145] *See* discussion *supra* pp. xx-xx.
[146] *See infra* tbl. 11.
[147] 10 minus .015 equals .985 or 98.5 percent.
[148] *See* discussion *supra* pp. xx-xx.
[149] 1.0 minus .145 equals .855 or 85.5 percent.
[150] *See infra* tbl. 11.
[151] 1.0 minus .601 equals .399 or 39.9 percent.

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 race/ ethnicity of counties) remain significant predictors of 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 Sentence Data Sets 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. To measure all 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. 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.[152] 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.[153]

Our study also highlights broader concerns about data quality and availability of the comprehensive data that would be necessary to thoroughly monitor and evaluate

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[152] *See, e.g.,* the studies reviewed by 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 CRIMINAL LAW BULLETIN 194 (2003).
[153] *Id.*

criminal justice decisions. Such issues raise fundamental 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 though 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 earlier in the process later become invisible if they are not properly documented. As a result some cases may be pursued more rigorously "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 show that the race and ethnicity of homicide victims is associated the imposition of the death penalty.[154] Overall, controlling for all other predictor variables, those who kill non-Hispanic African Americans are 60 percent less likely to be sentenced to death than those who kill non-Hispanic whites.[155] This disparity increases to 67 percent when the death sentencing rates

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[154] *See* discussion *supra* pp. xx-xx.
[155] *See* discussion *supra* pp. xx-xx.

of those who kill whites and those who kill Hispanics are compared.[156] The differences

are especially remarkable in cases where there is only one victim and where the homicide

did not include additional felonies.[157] 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 eleven times more likely to be sentenced to death than those who

kill Hispanics.[158] Where one of the above two identified aggravating circumstances is

present, those who kill non-Hispanic whites are still two to three times more likely to be

sentenced to death than other homicide offenders.[159]

The data also show geographic variations in rates of death sentencing. Excluding

small counties, death sentencing rates vary from roughly one-half of one percent of all

homicides to rates five times higher.[160] 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.[161] 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 found 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 1,696

felony-homicides in Florida, 1976-1987, we found that those who killed whites were

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[156] *See* discussion *supra* pp. xx-xx.
[157] *See* discussion *supra* pp. xx-xx.
[158] *See supra* tbl. 6.
[159] *See* discussion *supra* pp. xx-xx.
[160] *See supra* tbl. 8.
[161] *See* discussion *supra* pp. xx-xx.

nearly five times more likely to be sentenced to death than those who killed African Americans.[162] In Illinois, an analysis of 4,182 cases in which defendants were convicted of first degree murder between 1988 and1997, 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 back, at 1.5% of the cases where the victim(s) was Hispanic."[163] Thus, those who killed whites were 3.45 times more likely to be sentenced to death than those who killed African Americans.[164] A study of death sentencing in Nebraska between 1973 and 1999 found that among death-eligible cases in the major urban counties, 20 percent of those who killed whites were sentenced to death (17/84), compared to 11 percent of those who killed African Americans (3/28).[165] Similar differences have also been found in recent studies in Arizona, Maryland, North Carolina, Philadelphia, and in homicide cases under federal jurisdiction.[166]

Research on the issues addressed in this paper 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[167] from jury behavior.[168] More broadly, future researchers might identify all cases where defendants were eligible for the death penalty,[169] and distinguish them from those where a death sentence was sought by prosecutors or imposed by a jury. Such studies could

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[162] Radelet & Pierce, *Choosing Those Who Will Die: Race and the Death Penalty in Florida*, 43 FLA. L. REV. 1, 23 (1991). The Florida data showed that 16.2 percent of those who killed whites in felony-homicides, and 3.3 percent of those who killed African Americans, were sentenced to death. *Id.*, at 23-24.

[163] Pierce & Radelet, *supra* note ??, at 62-63.

[164] 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*, 81 NEBRASKA L. REV. 486, 583 (2002).

[165] *Id.*

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

[167] Such as seeking the death penalty.

[168] Such as imposing death sentences.

[169] All cases with special circumstances.

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 also allow researchers to discover which types of cases are

most strongly correlated with race and ethnic factors. The most comprehensive type of

study would collect information any potential capital case, and proceed to collect data

from all discrete stages of the capital charging and sentencing process.[170] 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

in the process[171] can become masked at later stages of the process because they then

appear to be legally appropriate factors.[172]

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.

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[170] Arrest through imposition of sentence.
[171] For example the decision to charge defendants with an accompanying felony.
[172] Possible future studies should also examine the possibility of gender effects.

Appendix A
Weighting of FBI Data

Appendix Table 1 compares Vital Statistics homicide counts for 1990 through 1999 with homicide counts derived from the FBI's SHR reports.[173] In order to align the definitions of homicide from these two data sources, justifiable homicides committed by private citizens[174] 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. When added to the murder/non-negligent manslaughter counts, a total of 33,138 homicides are included in the SHR data.

Appendix Table 1
Comparison of Vital Statistics to SHR Victim Data
(The basis for weighting SHR data)

Race of Victim	1. Vital Stats. Victims*	2. SHR Crim. Homicide Victims**	3. Tot. SHR Homicide Victims***	Ratio of Column 1 to Column 3****
White non-Hispanic	8,136	7,208	7,357	1.1059
African Amer. Non-Hispanic	9,338	8,806	9,101	1.0260
Hispanic	14,089	13,630	13,868	1.0159
Other Race, non-Hisp	2,037	1,417	1,441	1.4136
Unknown	314	1,343	1,371	0.2290
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.

**Criminal homicides only. This excludes homicides by negligence, homicides by police, and justifiable homicides by private citizens.

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

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[173] *See infra* tbl. 1.
[174] Data collected by the FBI Supplementary Homicide Reporting system, but not included in the official FBI homicide statistics.

****These are weights used to adjust the FBI offender estimates, obtained by dividing Column 1 figures by Column 3 figures.

As column one of Appendix Table 1 shows, Vital Statistics counted 33,914 homicides in California in the 1990s, 776 (2.3 percent) more than counted by FBI data.[175] This difference is small and not surprising given the fact that the collection of Vital Statistics death certificate data is mandated by state laws and that collection procedures have been in place for decades.[176] In large part, this discrepancy is probably because some small number police departments did not report some or all of their homicides to FBI data collection agencies.

Although the overall difference between FBI and Vital Statistics tallies of homicides is small, there are important variations in the counts on the basis of victim race/ethnicity. Vital Statistics counted 9,338 non-Hispanic African American homicide victims while the FBI data counted only 9,101, a difference of 2.6 percent. Similarly, Vital Statistics counted 14,089 Hispanic homicide victims versus 13,868 reported by the FBIs, a difference of 1.6 percent. In contrast, Vital Statistics reports 8,136 non-Hispanic white homicide victims versus 7,357 counted by the FBI system, a difference of 10.6 percent.

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 FBI data. Race/ethnicity information is missing for 1,371 (4.1 percent) of the FBI victims in California over the 1990-1999 period. There is missing

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[175] *See supra* app. tbl. 1.

[176] *See* Anderson, R. et.al., "Comparability of Cause of Death Between ICD-9 and ICD-10: Preliminary Estimates" National Vital Statistics Reports, Vol. 49, No. 2 May 18, 2001.

race/ethnicity data for only 314 (.9 percent) 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 use 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. These weights are calculated for specific categories of victim race and ethnicity. They are calculated simply as the number of homicides for a specific race/ethnicity category (estimated by Vital Statistics), divided by the comparable total number estimated by the SHR program.

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). This type of information also allows us to examine any possible effects of the offender's race/ethnicity in conjunction with the race/ethnicity of victims.

Appendix Table 2 presents death sentence rates by the race and ethnicity of offenders using on weighted FBI homicide offender data.[177] The results show that when the there are no controls for the race and ethnicity of homicide victims, the offender's race and ethnicity are significantly related to death sentence decisions.[178] Specifically, Appendix Table 2 shows that white offenders are more likely to receive the death sentence than offenders from other races/ethnicities.[179] However, because most homicide incidents are intra-racial (the offender and victim are both members of the same race/ethnic group), the potential effect of the defendant's race/ethnicity on death sentence rates needs to be examined in conjunction with victim's race and ethnicity. Appendix Table 3 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

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[177] *See infra* app. tbl. 2.
[178] *See id.*
[179] *Id.*

victims are committed by African American offenders, and 78.3% of homicides with (solely) Hispanic victims are committed by Hispanic offenders.[180]

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. Appendix Table 4 examines death sentencing rates by the race/ethnicity of offenders controlling for the race/ethnicity of victims.[181] Among homicides with non-Hispanic white victims, non-Hispanic African American offenders show the highest likelihood receiving a death sentence.[182] For homicides with non-Hispanic African American victims, Hispanic offenders are most likely to receive a death sentence.[183] Among cases with Hispanic victims, death sentences are most likely for non-Hispanic white offenders.[184]

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.[185] Overall, these results indicate that the race/ethnicity of victims, but not offenders, are consistently related to death sentencing rates.

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[180] *See infra* app. tbl. 3.
[181] *See infra* app. tbl. 4.
[182] *Id.*
[183] *Id.*
[184] *Id.*
[185] *See* Column 3, Table App.-4. The six comparisons are White non-Hispanic defendant and victim vs. 1) African American non-Hispanic victim (1.8783 vs. 0) and 2) Hispanic victim (1.8783 vs. 1.8519 -- not significant); African American non-Hispanic defendant and white non-Hispanic victim vs. 3) African American non-Hispanic victim (3.455 vs. .672) and 4) Hispanic victim (3.455 vs. .563); Hispanic defendant and white non-Hispanic victim vs. 5) African American non-Hispanic victim (1.914 vs. .895) and 6) Hispanic victim (1.914 vs. .402).

Appendix Table 2
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 off.	Ratio of White Offender rate to other Victim Race Rate
White non-Hispanic	5169	103	1.993	
African Amer. non-Hispanic	7888	101	1.280	1.56
Hispanic	11127	81	0.728	2.74
Other race non-Hispanic	1289	17	1.319	1.51
Total	25473	302	1.186	

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

Appendix Table 3
Distribution of Victim Race/Ethnicity by Offender Race/Ethnicity Based on
Weighted SHR Offender Data (Multiple Race/Ethnicity Homicides Excluded)

Race/Ethnicity of Victim	Race/Ethnicity of Offender			
	White non-Hispanic	African Amer non-Hispanic	Hispanic	Other non-Hispanic
White non-Hispanic	81.4	12.5	11.7	14.7
African Amer. 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	11127	1288
Total Percent	100.0	100.0	100.0	100.0

Chi Square = 37212.601, df=3, p < .001

Appendix Table 4
Death Sentence Rates for Offenders by Offender Race and Victim Race/Ethnicity Based on Weighted SHR Offender Data

Part a. Race of Victim- White non-Hispanic

Race of Defendant

	Cases	Death Sentences	Death Sentences per 100 Suspects
White non-Hispanic	4206	79	1.8783
African Amer. non-Hispanic	984	34	3.455
Hispanic	1306	25	1.914
Total	6496	138	2.1244

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

Part b. Race of Victim- African Amer. non-Hispanic

Race of Defendant

White non-Hispanic	244	0	0.0000
African Amer. non-Hispanic	5355	36	0.672
Hispanic	782	7	0.895
Total	6381	43	0.6739

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

Part c. Race of Victim- Hispanic

Race of Defendant

White non-Hispanic	540	10	1.8519
African Amer. non-Hispanic	1243	7	0.563
Hispanic	8715	35	0.402
Total	10498	52	0.4953

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