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IS CAPITAL PUNISHMENT A SHORT-TERM DETERRENT TO HOMICIDE? A STUDY OF THE EFFECTS OF FOUR RECENT AMERICAN EXECUTIONS

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The issue of whether capital punishment deters murder is still unresolved. Until 1975, the available research led to the conclusion that there was no substantial evidence of a deterrent effect.[1] The data supporting this conclusion were generally: (1) comparisons of homicide rates between states or nations with and without the death penalty,[2] (2) analyses of changes in homicide rates associated with the aboliton or installment of capital punishment,[3] (3) comparisons of homicide rates between states with relatively high rates of execution and those with relatively low rates of execution,[4] or (4) comparisons of homicide rates for different social groups (e.g., blacks, women, white men) and their correlation with the rates of executions within those groups.[5]

The appearance of Isaac Ehrlich's first study in 1975 revived the plausibility of deterrence.[6] Using an econometrics model to predict the "supply" of homicides, Ehrlich reported a significant elasticity in the homicide rate associated with the probability of murderers being exe-

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1 W. BOWERS, EXECUTIONS IN AMERICA (1974).

2 T. SELLIN, THE DEATH PENALTY (1959); Sellin, *Death and Imprisonment as Deterrents to Murder*, in THE DEATH PENALTY IN AMERICA: AN ANTHOLOGY (H. Bedau ed. 1964).

3 Hayner & Cranor, *The Death Penalty in Washington State*, 284 ANNALS 101 (1952); Samuelson, *Why was Capital Punishment Restored in Delaware?*, 60 J. CRIM. L. CRIMINOLOGY & POLICE SCI. 148 (1969).

4 Forst, *The Deterrent Effect of Capital Punishment: A Cross-State Analysis of the 1960's*, MINN. L. REV. 743 (1977); Schuessler, *The Deterrent Influence of the Death Penalty*, 284 ANNALS 54 (1952).

5 Schuessler, *supra* note 4.

6 Ehrlich, *The Deterrent Effect of Capital Punishment: A Question of Life and Death*, 65 AM. ECON. REV. 397 (1975).

cuted following their convictions. He concluded that "an additional execution per year over the period in question (1933-1969) may have resulted, on average, in seven to eight fewer murders."[7] A second study by Ehrlich based on cross-sectional state data for the two years of 1940 and 1950 led him to a similar conclusion.[8] At about the same time, a study by Yunker examining the correlation between the number of executions per year and the homicide rate three years later led to the even stronger conclusion that each execution deters 156 murders.[9]

These studies have been reviewed often and thoroughly. Various authors have shown that the findings may be an artifact of the statistical procedures used or the specific characteristics of the time intervals selected for study. In addition, the studies have been criticized for their failure to include particular control variables which could account for the observed deterrence, and their treatment of data in aggregate rather than by state or region.[10] Since these criticisms are well reported, there is no need to detail them again. It is sufficient to say that the studies by Ehrlich and Yunker do not conclusively verify the deterrent effect of the death penalty.

Several recent studies using econometric models have tried to correct the flaws of the Ehrlich studies.[11] None of these studies found significant elasticity coefficients for capital punishment as a predictor of homicide rates, even though they employed a number of different measures of execution and homicide rates. Taken together, the econometric studies do not provide unequivocal evidence of deterrence.

Two other lines of research, however, have recently yielded results consistent with the deterrence hypothesis. Lester has shown that the likelihood of a decrease in homicides in a given state from one year to the next is statistically related to whether that state executed prisoners during the first year.[12] This likelihood is also related to the number of ex-

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[7] *Id.* at 414.

[8] Ehrlich, *Capital Punishment and Deterrence: Some Further Thoughts and Additional Evidence*, 85 J. POL. ECON. 741 (1977).

[9] Yunker, *Is the Death Penalty a Deterrent to Homicide: Some Time-Series Evidence*, 1 J. BEHAV. ECON. 45 (1976).

[10] Baldus & Cole, *A Comparison of the Work of Thorsten Sellen and Isaac Ehrlich on the Deterrent Effect of Capital Punishment*, 85 YALE L.J. 170 (1975); Bowers & Pierce, *The Illusion of Deterrence in Isaac Ehrlich's Research on Capital Punishment*, 85 YALE L.J. 187 (1975); Klein, Forst & Filatov, *The Deterrent Effect of Capital Punishment: An Assessment of the Estimates*, in DETERRENCE AND INCAPACITATION: ESTIMATING THE EFFECTS OF CRIMINAL SANCTIONS ON CRIMINAL RATES 336 (1978); Passell, *The Deterrent Effect of the Death Penalty: A Statistical Test*, 28 STAN. L. REV. 61, 66 (1975).

[11] Black & Orsagh, *New Evidence on the Efficacy of Sanctions as a Deterrent to Homicide*, 58 SOC. SCI. Q. 616 (1978); Kleck, *Capital Punishment, Gun Ownership, and Homicide*, 84 AM. J. SOC. 882 (1979); Comment, *Deterrence and the Death Penalty: A Temporal Cross-Sectional Approach*, 70 J. CRIM. L. & CRIMINOLOGY 235 (1979).

[12] Lester, *Executions as a Deterrent to Homicides*, 44 PSYCHOLOGICAL REP. 562 (1979).

ecutions in the state the first year, with nine to sixteen executions producing a significantly greater likelihood of a drop in the number of homicides (69% likelihood) than eight or fewer executions (52% likelihood). With more than sixteen executions in a state in a given year, however, the likelihood of a drop in homicides the following year is only 61%, which is not significantly different from either of the other two percentages.[13]

One can envision third-variable causes which might undermine a deterrence interpretation of Lester's data. For example, the declining execution rate for the nation as a whole in the 1950's and 1960's was coupled with rising murder rates. The growing murder rates, however, can be attributed to the rising percentage of fifteen to twenty-four year-olds in the general population,[14] the declining rates of imprisonment for homicide,[15] and the increases in handgun ownership.[16] This alternate interpretation appears unlikely, however, since Lester reports the same deterrence pattern when comparisons are made across states within individual years.[17] Unless other variables are identified which can account for Lester's results, his simple studies must be taken as offering substantial evidence of a deterrent effect. In addition, Lester's findings suggest a particular pattern of deterrence: the deterrent impact of a particular execution is local to the state of its occurrence and lasts for approximately one year.

A second approach has yielded evidence of a different kind of pattern of deterrence. Phillips, starting with the assumption that deterrence should be strongest in the weeks immediately following an execution, analyzed the weekly homicide statistics for London, England before and after twenty-two highly publicized executions from the years 1858 through 1921. He found that the homicide rate declined by about 35% for each of the two weeks following these executions. He also found that the more extensive the newspaper accounts of an execution, the greater the drop in homicides. In the third through the fifth weeks following the executions, however, the homicide rates rebounded above the original baselines, virtually cancelling the deterrent effects of the two previous weeks. Following the fifth week, the homicide rates returned to their baselines.[18]

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13 Lester, *Deterring Effect of Executions on Murder as a Function of Number and Proportion of Executions*, 45 PSYCHOLOGICAL REP. 598 (1979).

14 Clinton & Spielberger, *Is Delinquency Increasing? Age Structure and the Crime Rate*, 49 SOC. FORCES 493 (1971).

15 Forst, *supra* note 4, at 762.

16 Kleck, *supra* note 11, at 908.

17 Lester, *supra* note 12.

18 Phillips, *The Deterrent Effect of Capital Punishment: New Evidence on an Old Controversy*, 86 AM. J. SOC. 139 (1980).

At least three other studies prior to Phillips looked for short-term deterrence in the weeks following executions, but none found evidence of either the deterrent or the rebound effect.[19] These failures may be due to the small scale of the studies, which could have prevented the verification of weak but real effects. Dann[20] and Savitz[21] restricted their analyses to homicide rates for the city of Philadelphia. Graves[22] compiled homicide rates from the three largest counties in California.

Only one small effort has examined the short-term deterrent effect of American executions for the nation as a whole. Using a chi-square analysis, Lester found that the number of homicides for the two weeks following Gary Gilmore's execution in 1977 dropped more than for a comparable two-week period from the preceding year, but the difference was only marginally significant.[23] This same decline is analyzed with different methods and discussed in detail in the present paper.[24]

Apart from Lester's brief study, no major effort has been made to verify or disprove the existence of a short-term deterrent effect for capital punishment in the United States. As Phillips notes,[25] American data are more likely than British findings to significantly affect American opinion and policy on capital punishment. For a variety of reasons, a pattern of deterrence found in England might not generalize to the United States. English retribution for murder during the period of Phillips' study was much swifter than it currently is in the United States. Executions were more certain to follow conviction and sentencing; appeals and prolonged delays were much rarer. In addition, the English newspapers often described the trials and executions in gruesome detail. Furthermore, England is a much more compact country than the

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19 Graves reports trends which suggested both a two-day decrease in homicides immediately following each California execution and a two-day increase in homicides (a "brutalizing effect") just before each execution. Graves, *A Doctor Looks at Capital Punishment*, 10 J. LOMA LINDA SCH. MED. 137 (1956), *reprinted in* THE DEATH PENALTY IN AMERICA: AN ANTHOLOGY (H. Bedau ed. 1964). These trends represent comparisons of the days of 74 weeks in which there were executions with the days of 116 control weeks in which there were no executions. Unfortunately, however, Graves did not report any tests for the significance of these trends. Chi-square analyses by the present author found that neither the deterrent effect, $x^2(1) = 2.08$, $p < .10$, nor the brutalizing effect, $x^2(1) = 2.49$, $p < .10$, were significant.

20 Dann, *The Deterrent Effect of Capital Punishment*, FRIENDS SOC. SCI. SERIES (Bull. 29) (1935).

21 Savitz, *A Study in Capital Punishment*, 49 J. CRIM. L., CRIMINOLOGY & POLICE SCI. 338 (1958).

22 Graves, *supra* note 19.

23 Lester, *Effect of Gary Gilmore's Execution on Homicidal Behavior*, 47 PSYCHOLOGICAL REP. 1262 (1980).

24 *See infra* text accompanying notes 36-50.

25 Phillips, *supra* note 18, at 147.

United States, so any execution was necessarily close to home.[26] The present study is an examination of whether or not the deterrent and rebound effects reported by Phillips also occur for executions in the United States, either on a national or local level.

Weekly homicide rates have only been available in the United States since 1972.[27] A standard system for recording deaths, the International Classification of Deaths Code,[28] is now used by the National Center for Health Statistics and by all of the Bureaus of Vital Statistics of the fifty states and the District of Columbia. Since these sources have been available, seven executions have occurred in the United States: Gary Gilmore (January 17, 1977 in Utah), John Spenkelink (May 25, 1979 in Florida), Jesse Bishop (October 22, 1979 in Nevada), Steven Judy (March 9, 1981 in Indiana), Frank Coppola (August 10, 1982 in Virginia), Charles Brooks (December 18, 1982 in Texas), and John Lewis Evans (April 22, 1983 in Alabama). The present study covers the first four of these executions; the last three occurred while this paper was in preparation, so the homicide rates surrounding them were not available.[29]

Each of the executions covered in the present study received extensive news coverage, although the amount of coverage decreased substantially with each successive execution. Gilmore's execution was a major media event, since his was the first in more than a decade. In the ten weeks preceding the execution, the three major television networks averaged over twenty-seven minutes of total air-time on Gilmore.[30] On the day of the execution, it was the lead news story on all three networks, receiving an average of seven minutes and ten seconds per network.[31] *Newsweek* devoted twenty column inches to the execution;[32] *Time* spent thirty-eight inches covering it.[33]

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26 Consistent with Lester's findings, the proximity of the executions may have enhanced the deterrent impact.

27 The FBI Uniform Crime Statistics, the older and more commonly used source of homicide rates, reports crime frequencies in only monthly intervals. This time interval makes the Uniform Crime Statistics unusable for the present study.

28 WORLD HEALTH ORGANIZATION, 1 MANUAL OF THE INTERNATIONAL STATISTICAL CLASSIFICATION OF DISEASES, INJURIES, AND CAUSES OF DEATH (9th ed. 1977). The definition of homicide used in this code includes all felonious homicides (code numbers E960-969). Non- felonious homicides (e.g., police shootings of fleeing felons, etc.) were not included.

29 Homicide rates are first compiled by the Registrars of Vital Statistics of the individual states and the District of Columbia and forwarded to the National Center for Health Statistics. Homicide records are generally not available from the individual states for six months to a year following a particular execution. The national homicide records for any given year are not available from the National Center for approximately three years following that year.

30 VANDERBILT UNIVERSITY, TELEVISION NEWS INDEX AND ABSTRACTS (1976, 1977).

31 *Id.*

32 *Gilmore Gets His Wish*, NEWSWEEK, Jan. 31, 1977, at 31.

33 *After Gilmore, Who's Next to Die?*, TIME, Jan. 31, 1977, at 48.

The coverage of the subsequent executions decreased substantially. The networks averaged four minutes and forty seconds of coverage on the day of Spenkelink's execution, two minutes on Bishop's, and one minute on Judy's.[34] The declines in network and news magazine coverage preceding the executions parallel these figures.[35] Still, each execution was a major news event, a condition which Phillips' findings suggest is necessary for a substantial deterrent effect to occur.

Since weekly homicide rates are available from 1972 to the present, it is possible to use Box-Jenkins ARIMA modeling for the data analyses.[36] The advantages of this procedure over the nonparametric procedures used by Phillips are that one can examine time-series data for nonstationarity,[37] autoregressive processes,[38] and moving-average processes.[39] Seasonal or annual changes in the data due to nonstationarity, autoregression, and moving-average processes can also be identified. In a sequential process, ARIMA modeling allows one to identify which of these sources of systematic variance are contained in the time-series data set, to calculate a parameter which estimates the strength of each source of variance, and to use these parameters in predicting particular data-points within the series. Confidence boundaries can be calculated for each prediction. One can then examine whether the observed data-points deviate significantly from their predictions.[40]

ARIMA modeling of the homicide data in the present arrays revealed significant autoregressive, moving-average, and seasonal autoregressive parameters, an ARIMA (1,0,1) (1,0,0) model. Tests of the adequacy of this model showed that the arrays contained no other systematic sources of variance.

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34 VANDERBILT UNIVERSITY, TELEVISION NEWS INDEX AND ABSTRACTS (1979, 1981).

35 For example, Newsweek gave only nine column inches to the execution of Mr. Spenkelink, *Electric Chair is Turned On*, NEWSWEEK, June 4, 1979, at 26, and did not report the last two executions at all.

36 *See generally* Box & Jenkins, TIME-SERIES ANALYSIS: FORECASTING AND CONTROL (1976). Homicide rates through 1976 were available at the time of this study. The National Center for Health Statistics supplied homicide rates for 1977 and 1978. I requested homicide rates for 1979 and 1981 from the Registrars of Vital Statistics of each state and the District of Columbia, receiving for 1979 statistics from 46 of the states and the District of Columbia, representing 95% of the population, and, for 1981, statistics from 41 states and the District of Columbia, representing 84% of the population. While the failure to obtain complete homicide rates surrounding the last three executions is regrettable, these data are sufficient to discern the deterrent and rebound effects of the executions, if any.

37 Non-stationarity is a linear increase or decrease in the rates from the beginning to the end of the time period.

38 An auto-regressive process is a pattern of systematic increase and decreases in the observed frequencies over a range of sequential observations.

39 A moving-average process is a "random shock" effect, a tendency for one observation to impact upon the immediately following observation.

40 A brief introduction to ARIMA modeling can be found in Cook & Cambell, QUASI-EXPERIMENTATION: DESIGN AND ANALYSIS ISSUES FOR FIELD SETTINGS (1979).

FIGURE 1
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF GARY GILMORE

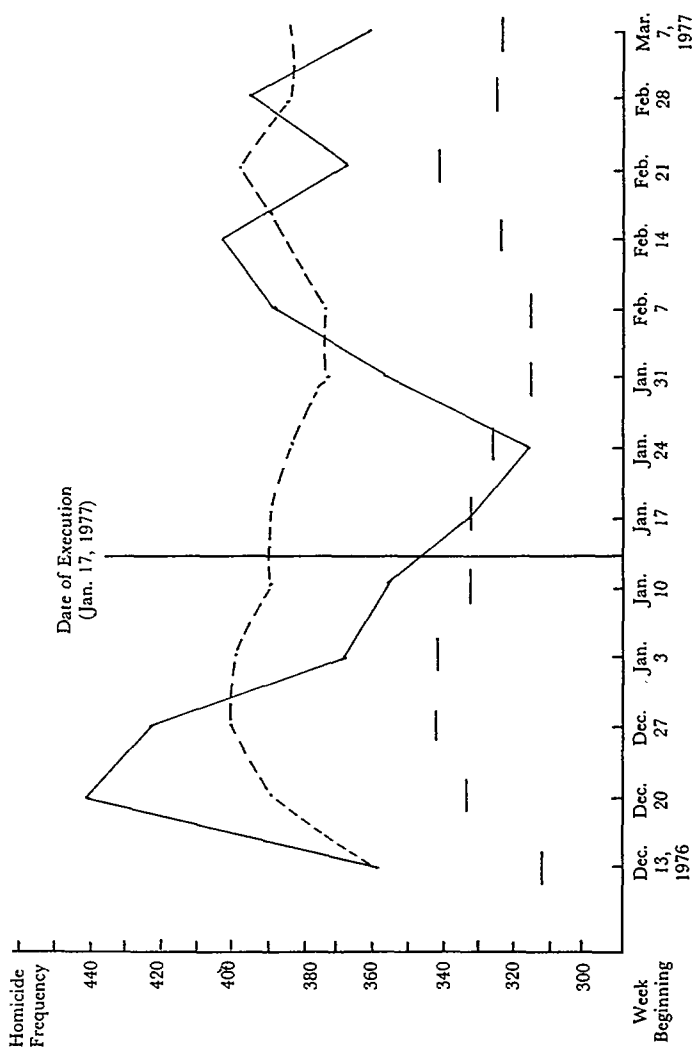

Figure 1 presents the predicted national homicide rates from the ARIMA model, the lower 95% confidence boundary of the predicted rates,[41] and the actual number of homicides for each of the five weeks preceding and each of the eight weeks following the execution of Gary Gilmore. Figures 2 through 4 present the same information for the weeks surrounding each of the other three executions. In each of the two weeks following Gilmore's execution, the number of homicides was significantly lower than predicted by the ARIMA model, $p < .05$ for each week. None of the other eleven weeks presented in Figure 1 showed a similar lower-than-predicted homicide rate. The third through the fifth weeks following the execution, however, give no evidence of a systematic increase in homicides as was reported by Phillips for the London data.[42] Moreover, Figures 2 through 4 indicate that the other three executions had no discernible effect on homicide rates.[43]

On the surface, the interpretation most consistent with Phillips' results is that the Gilmore execution had a deterrent effect on homicides because of its massive publicity, while the lower publicity given to the remaining executions prevented them from having such an effect. However, a closer examination of the Gilmore execution suggests an alternate explanation. Gilmore's execution occurred on January 17, 1977, and coincided almost exactly with the onset of one of the worst blizzards ever to hit the eastern United States. Snow fell as far south as Georgia and Alabama and temperatures for this two-week period plunged far below normal. Weather conditions in the industrial states were the worst in years.[44] The parameter for controlling seasonality in the ARIMA model may not be sufficient to account for the impact of this unusually bad weather on homicide rates. Without further analysis, one

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[41] A frequency which falls on or below this boundary can be attributed to a causal event with 95% certainty and would occur by chance only 5 times in 100 occurrences.

[42] The unusually high homicide rates during the last two weeks of December is not an aberration. The homicide frequencies for each year covered by this study showed similar spikes. During the 1970's, the last four weeks of December averaged, in order, 370, 408, 441, and 428 homicides. In the first week of January, the average number of homicides returned to 370. Murder, then, increases during the holidays.

[43] The frequencies are such that the addition of the uncollected 5% of the national homicide data for 1979 and 16% of the data for 1981 would be very unlikely to produce either the two-week declines or the three-week increases necessary to replicate Phillips' London findings.

[44] U.S. DEPT. OF COMMERCE, DAILY WEATHER MAPS, (Jan. 1-31, 1977) [hereinafter cited as DAILY WEATHER MAPS].

FIGURE 2
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF JOHN SPENKELINK

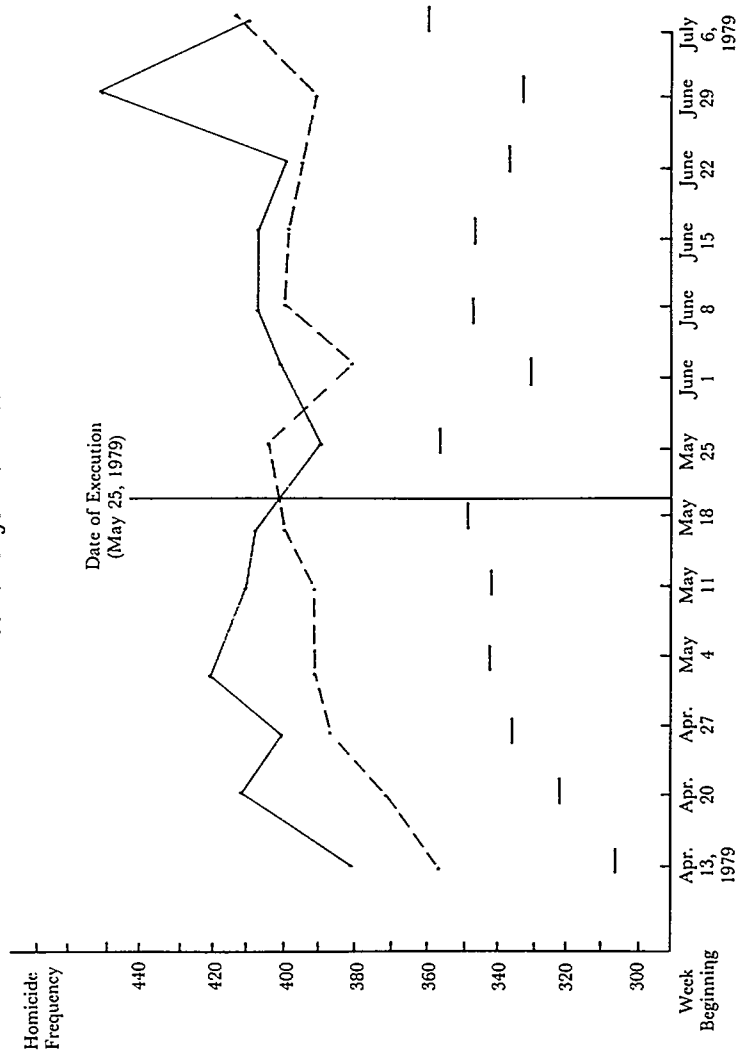


FIGURE 3
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF JESSE BISHOP

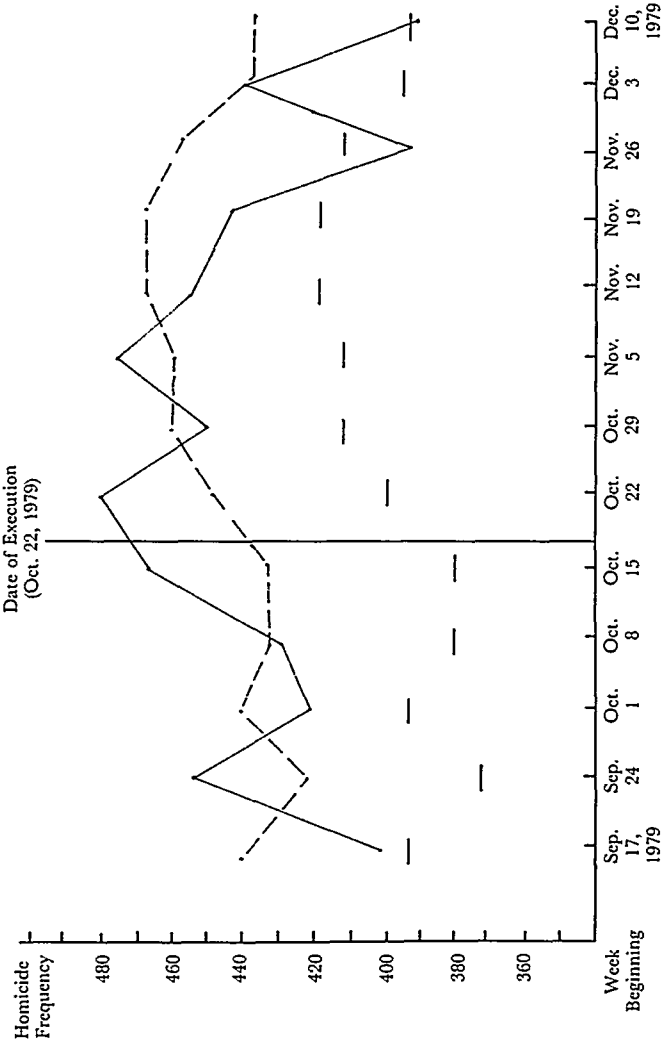
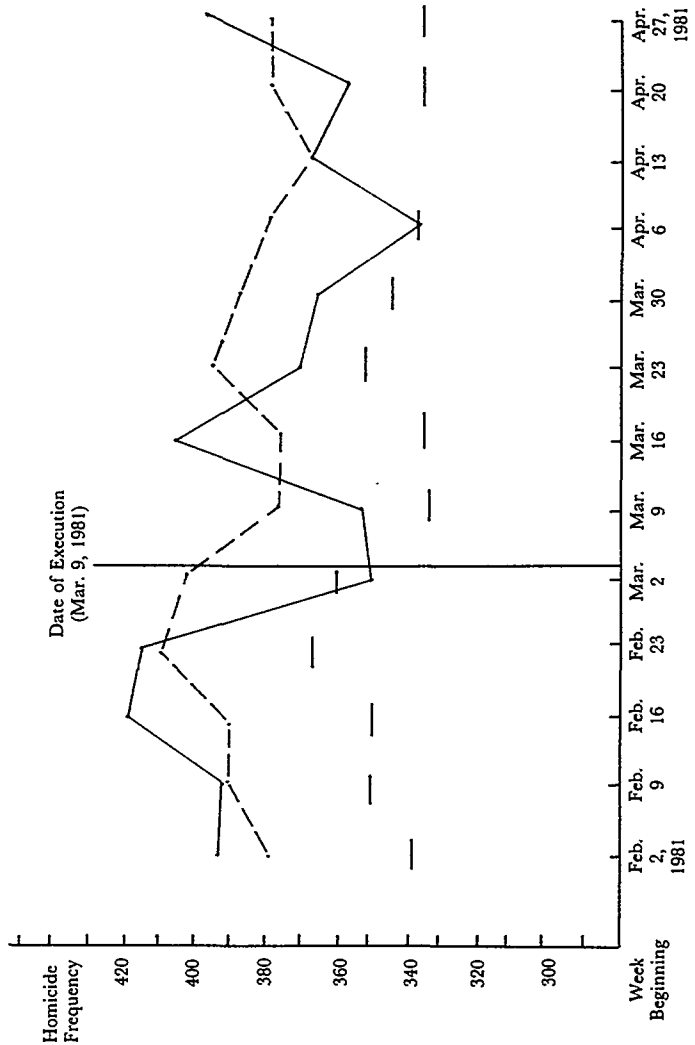


FIGURE 4
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF STEVEN JUDY



could argue that the significant decline in homicides following the Gilmore execution was weather related and not due to the execution.[45]

These two possible effects on the homicide rates can be disentangled through the use of regional analyses. Thirteen western states had normal temperatures and no unusual precipitation during this two-week period.[46] On the other hand, the seventeen midwestern states were atthe opposite extreme.[47] The midwestern states all averaged more than twelve degrees below their normal temperatures and at least some snow fell virtually every day. If the lower homicide rates are exclusively weather related, the western states should not show a significant decline in homicides during the critical two weeks while the midwestern states should show the strongest decline.

Figure 5 shows the predicted homicide rates, their lower 95% confidence boundaries, and the actual number of homicides for each of the weeks surrounding the Gilmore execution for the normal-weather western states. Figure 6 presents the same information for the frozen midwestern states. As Figure 5 shows, the homicide rates for the western states did not differ significantly from the predicted rates for either of the two weeks following the Gilmore execution. Figure 6, however, shows a sharp decline in murders in the midwestern states for the week following the execution, the same week the blizzard hit.

A remaining puzzle is that the national pattern (Figure 1) shows a sharp decline in homicides during the week of January twenty-fourth, the second week following the Gilmore execution, but this pattern is not found for either the western states (Figure 5) or the midwestern states (Figure 6). Figures 7 and 8 show that this decline occurred primarily in the northeast[48] and in the southeast.[49] Once again, this pattern appears to be weather related. The worst weather of January, 1977 in both the

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[45] There are surprisingly few studies on the influence of weather on violent crime apart from those studies on seasonal patterns. Violent crimes of all types are highest during the summer months and lowest during the winter. *Cf.* Harries, CRIME AND THE ENVIRONMENT (1980). However, the few studies of the effects of short-term weather fluctuations upon violent crime which have been reported support the common-sense assumption that inclement weather and low temperatures result in lower rates of violent crime, including homicides. *Cf.* Feldman, *Factors Influencing Criminal Behavior in Newark, N.J.: A Local Study in Forensic Psychiatry*, 24 J. FORENSIC SCI. 234 (1979).

[46] The western states included in this analysis are Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[47] The midwestern states included in this analysis are Arkansas, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Missouri, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin.

[48] The northeastern states included in this analysis are Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

[49] The southeastern states included in this analysis are Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas.

FIGURE 5

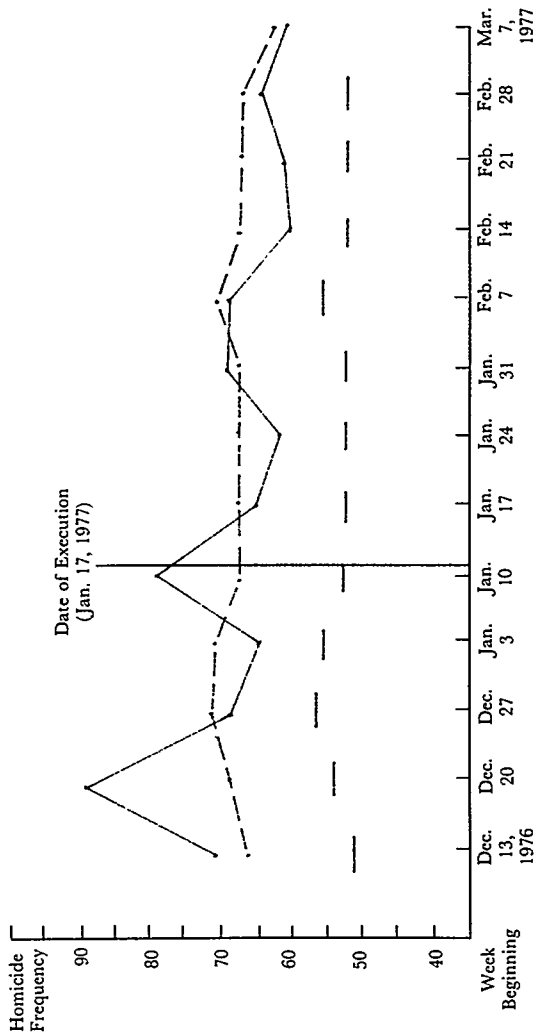


FIGURE 5
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF GARY GILMORE FOR THE WESTERN STATES (NORMAL WEATHER)

FIGURE 6
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF GARY GILMORE FOR THE MIDWESTERN STATES (BLIZZARD WEATHER)

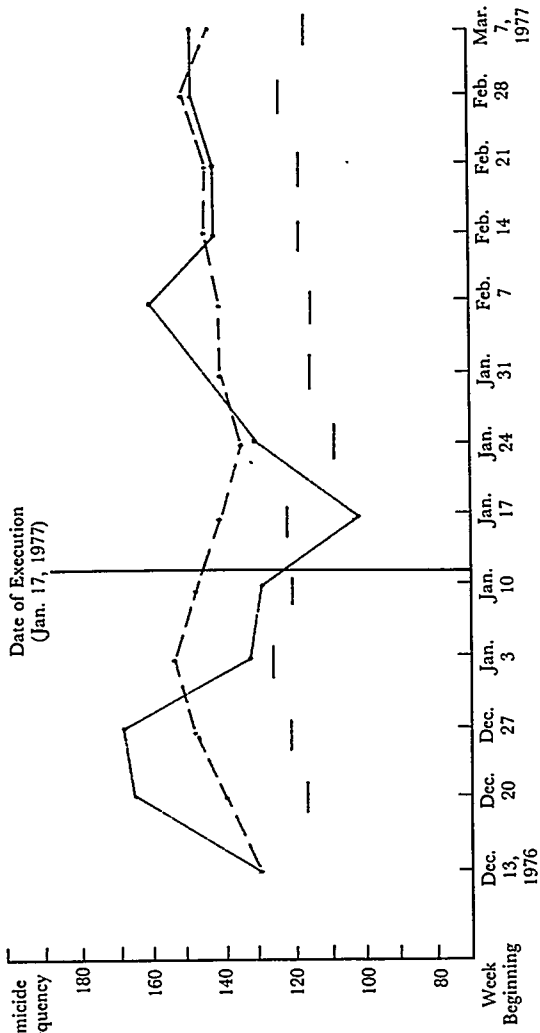


FIGURE 7

HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF GARY GILMORE FOR THE NORTHEASTERN STATES

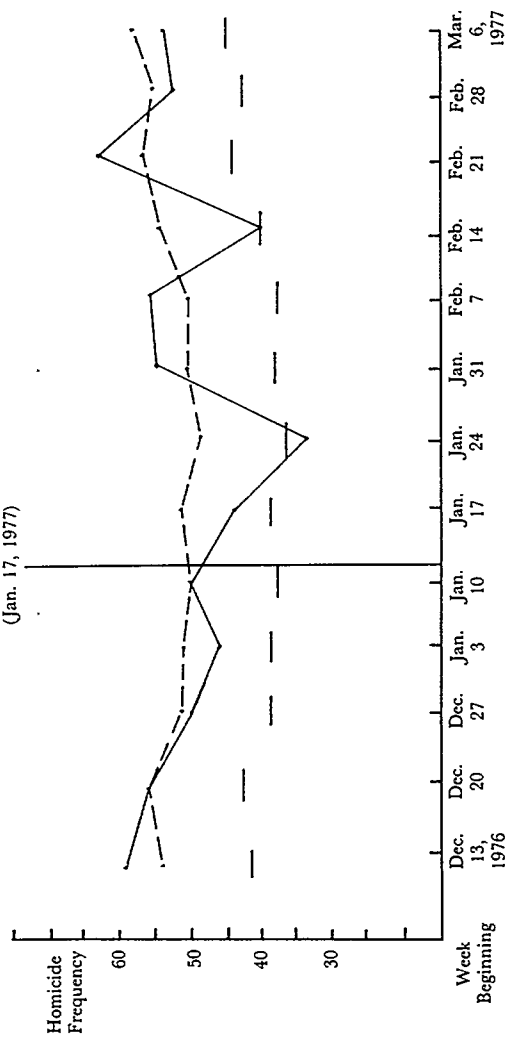
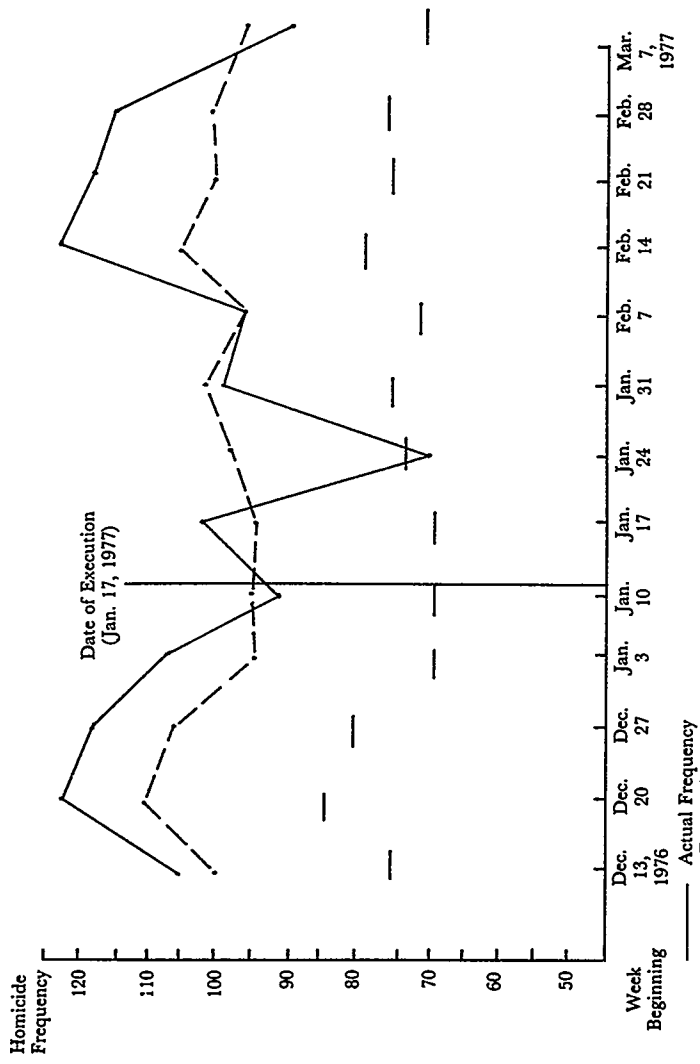


FIGURE 8
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF GARY GILMORE FOR THE SOUTHEASTERN STATES



northeast and the southeast occurred during the week of January twenty-fourth. In the northeast, substantial snow fell on only two days during the week of January seventeenth, while it fell on five days during the week of January twenty-fourth. In the southeast, substantial precipitation (a mixture of rain and snow) fell on one day during the week of January seventeenth, and on five days during the week of January twenty-fourth.[50] As the severe weather moved further south and east, the drop in homicides seems to have followed. The most plausible conclusion of this analysis is that the drop in homicides following the Gilmore execution was caused by the unusually severe winter weather rather than by the execution.

Finally, the possibility of local deterrence should be examined. Short-term deterrence and rebound may occur only in the state of the execution and, perhaps, its contiguous states. This local effect may be lost in the wash of national data. The local data, however, do not support this hypothesis. For example, Figure 9 plots the number of homicides in Florida and its bordering states for the weeks surrounding the Spenkelink execution. No evidence of a decline or rebound is shown. The comparable plots for the other three executions also show no declines or rebounds.

The failure to find local effects is hardly surprising since each of these executions received national news coverage. When executions were more common, as was the case during the period covered by Lester's studies, most executions, no doubt, were reported only in local or statewide media. This limited reporting would of course prohibit a nationwide pattern of deterrence for a given execution. As long as executions in the United States remain rare and each one is reported by the major television networks and news magazines, a national pattern of deterrence is more likely than a local one.

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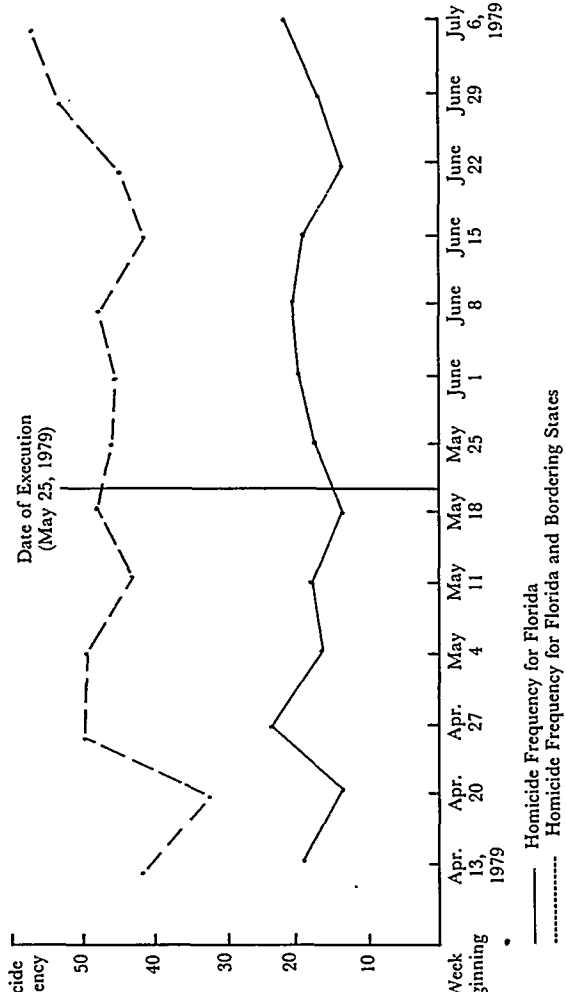
[50] DAILY WEATHER MAPS, *supra* note 44.

FIGURE 9
HOMICIDE FREQUENCIES FOR THE WEEKS SURROUNDING THE EXECUTION OF JOHN SPENKELINK FOR FLORIDA AND ITS BORDERING STATES



In summary, the present study fails to find any evidence that capital punishment has either a short-term deterrent or a rebound effect on homicides. If such effects do occur, they are too small for detection given the available number of executions and the present mode of analysis. Considering the national data pool and the findings of the state and regional analyses, however, it would be wishful thinking to imagine that adding additional executions to the study would provide support for the deterrence hypothesis. These findings do not mean, of course, that deterrent and rebound effects may not occur at other times and in other social circumstances. Nor do they disprove deterrence for capital punishment in general or rule out other plausible patterns of deterrence.[51] The present study does show, however, that the particular pattern of deterrence reported by Phillips does not occur here and now in American society.

Many authors have concluded that the presence or absence of deterrence probably cannot be proved statistically.[52] Certainly the econometric studies and the older studies which look for evidence of deterrence without specifying particular patterns are so plagued with problems that they are unlikely ever to resolve the debate. Those studies which look for particular patterns of deterrence, however, do offer the potential for resolution. If particular patterns of deterrence are replicated across different studies, one must conclude that the deterrence hypothesis is correct. On the other hand, if reliable and unequivocal patterns are not shown, the deterrence hypothesis is undermined. With about 1,100 inmates still under the sentence of death, and a resurgence of popular support for capital punishment reported by the polls, the issue remains vital. Human lives are in the balance either way. One can only hope that social scientists will continue to give their best efforts to the deterrence issue rather than retreating in despair.

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[51] The pattern of deterrence in the United States (if any) may be diffused across one year or so as Lester's findings suggest, rather than concentrated into a shorter time span.

[52] *See, e.g.*, van den Haag, *On Deterrence and the Death Penalty*, 60 J. CRIM. L. CRIMINOLOGY & POLICE SCI. 141, 146 (1969).