

coverage — in some cases, extensive coverage. Events, then, may have both an independent effect and one mediated by the news. Finally, it is worth noting that some events, such as proof that we wrongly executed an innocent person, could have yet a larger effect, particularly if media coverage of the event was extensive.

Overall, the model explains a modest amount of variation in short-run changes in opinion. The standard for assessing the adequacy of the model fit is, however, unclear. Any time we seek to explain change, model fit will not be as impressive as when we explain levels of opinion. Calculating predicted levels of opinion based on the estimates in Table 6.1 shows that we explain the bulk of the variation in levels of opinion. So our model explains levels of opinion quite well. The model also stands up well to diagnostic tests and performs well when we look at shorter sub-periods rather than the entire period, so the model is quite robust to minor changes in specification. We now consider the effects of each variable in detail in turn.

Imagine that homicides increased by 1,000 in some quarter. Our results indicate that this would have no immediate effect on public opinion; changes in the number of homicides do not produce an immediate (lagged one period) change in public opinion. (The coefficient on lagged changes in homicides is not significantly less than zero.) However, this change in the number of homicides disturbs the long-run equilibrium relationship between homicide levels and levels of public opinion. To maintain equilibrium, public opinion must increase by 3.41 in the long run ( $3.41 \times 1$ , homicides are measured in thousands and the coefficient here is that on homicides in column 1). But only a portion of this effect is realized in the next period, a portion given by the coefficient on the long-run equilibrium component in column 2 (0.17), as we noted earlier. Tracing out the effect of our increase in homicides, we expect to see 17 percent of that long-term change take place in the following quarter, and then 17 percent of the remaining disequilibrium amount in each quarter thereafter until the full impact of 3.41 points is reached. This means we would see a change of 0.59 ( $0.17 \times 3.41$ ) in the pro-death penalty direction in the quarter following the shock to homicides. There would be a continuing, but gradually decreasing, effect of this shift in homicide rate so that the first time period would see an impact of 0.59; the second, an impact of  $0.17 \times (3.41 - 0.59)$ , or 0.49; the third,  $0.17 \times (3.41 - 0.59 - 0.49)$ , or 0.40; and so on. In each successive period, 17 percent of the remaining disequilibrium would be corrected. This would continue for about twenty quarters, the amount of time it takes until the 3.41 change in public opinion is achieved.<sup>16</sup>

We can similarly track the effects of a shock in the net tone of *New York Times* articles, introduced in Chapter 4 — that is, the number of pro-minus the number of anti-death penalty tone articles in a given period.

High numbers reflect more pro-death penalty coverage. Here we choose to examine a five-point change in the anti-death penalty direction, where this is the average quarterly value of net tone in the time period from 1995 to the end of the series. Once again, the change in media coverage has no immediate effect (note the insignificant effect of change in net tone in column 2). As in the previous case, the effects on public opinion are all felt via the long-run relationship. Here a 5-point decrease in net tone leads to an expected 0.75-point decrease in death penalty support in the long run ( $0.15 \times 5$ ). As in the case of increases in the homicide level, this effect does not happen all at once, but in stages over several quarters, in fact several years. The dynamic is exactly the same as that for homicides, with just over 17 percent of the equilibrium error corrected in the quarter after it occurs, 17 percent of the remaining equilibrium error corrected in the quarter after that, and so on until the new equilibrium value of public opinion has been reached.

If we look at how net tone has actually varied over the period covered in this analysis, from January 1976 to the end of 2005, we find that there was one period — the second quarter of 1990 — in which there were sixteen more pro-than anti-death penalty stories in the *New York Times*. Similarly, in the second quarter of 2001, there were forty-three more anti-than pro-death penalty stories. So there is quite a lot of movement; net tone, in fact, ranged from +16 to -43, or a swing of almost sixty points. Based on the estimates reported in Table 6.1, we can calculate the equilibrium or expected value of public opinion for each case, holding the number of homicides constant at 5,000, its approximate mean quarterly value over the full period (homicides numbered nearly 6,000 in 1990 and dipped below 4,000 in 2001). The equilibrium value of public opinion given sixteen pro-death penalty stories and 5,000 homicides is given by the long-run equation in column 1, substituting values of net tone and homicides into the equation:  $8.95 + (0.149 \times 16) + (3.41 \times 5) = 28.38$ , for a net pro-death penalty opinion heavily in favor of capital punishment. Compare this with the equilibrium value of opinion associated with a net tone of -43 assuming the same 5,000 homicides. Now the equilibrium level of opinion is given by  $8.95 + (0.149 \times -43) + (3.41 \times 5) = 19.59$ . In just over a decade, the equilibrium value of public opinion shifted by 8.79 percentage points. Although in both periods death penalty supporters outnumber opponents, the public opinion altered dramatically. These are strong effects indeed.

A comparable look at the effect of homicides across its full range of values presents one way of assessing the relative importance of homicides and net tone over this historical period. During the period of our study, the number of homicides per quarter in the United States ranged from a high of 6,179 to a low of 3,845, or by a total of 2,334. We hold net tone at a neutral value to explore the consequences of homicide levels

absent any media coverage of the death penalty (or equal amounts of pro- and anti-death penalty coverage) and to simplify the equilibrium calculations. Under this scenario, the equilibrium value of opinion for the lowest observed homicide level is given by  $8.95 + (0.149 \times 0) + (3.41 \times 3.845) = 22.06$ . The corresponding equilibrium value of net support at the peak homicide levels was  $8.95 + (0.149 \times 0) + (3.41 \times 6.179) = 30.02$ . Across the range of the data, then, we see comparable effects on the change in equilibrium levels of net support for the death penalty due to net tone and to homicides, about eight percentage points in each case.

The statistical evidence so far supports two conclusions. First, public opinion on the death penalty is indeed linked to homicide levels and net tone, but the linkage is apparent over the long run; there are no significant short-term effects. Second, related to the first point, public support for the death penalty is highly resilient. We see evidence of its resilience in several ways. First, we have no evidence that changes in either the number of homicides or net tone produce short-term changes in public opinion. Additionally, the responsiveness of public opinion is limited in the long run both in the overall size of the effects of homicides and net tone and in the speed with which public opinion reacts to equilibrium errors, as measured by the error correction coefficient in column 2; change comes in small increments and unfolds only slowly over time. What all this means in plain English is that public opinion does indeed respond to homicide levels and to the net tone of media coverage about the death penalty. But the change is sluggish not immediate. Opinion slowly drifts in response to important changes to the tenor of the debate as expressed in the media and to the violent crime rate. This opinion shift is sensible and important, but it is not immediate. Americans are not constantly paying attention to each and every news article or event related to the death penalty. In the aggregate, however, public opinion does indeed respond to changing circumstances in very sensible ways. Over the last forty years, violent crime rates and media coverage have varied dramatically and with that variation has come limited but important changes in public opinion. These shifts in public opinion, as we will see in Chapter 7, are linked in turn to important changes in public policy.

The results we present in Table 6.1 are highly robust. We considered various ways of modeling these results and tested many different specifications to ensure that our results were not sensitive to small details of our statistical specification before settling on the model we presented. One particular possibility that we tested was that increasing numbers of executions and exonerations themselves, rather than media coverage of them, could explain death penalty sentiment. Mounting numbers of executions may have made the public react with either complacency (becoming more accustomed to increasing numbers of executions as they increased during the 1980s and 1990s) or outrage (perhaps responding to a more routine

use of a punishment previously reserved only for extraordinary circumstances). But there is no evidence in favor of either hypothesis. Executions have no effect on death penalty sentiment. Similarly, the number of exonerations may have affected public sentiment, so we considered that possibility by including the actual number of exonerations in the model. Media coverage may lead us to think that exonerations are a recent occurrence so that media attention is merely translating the effect of actual exonerations. But this possibility is easily dismissed. We see some weak statistical evidence that the number of individual exonerations has a short-run effect on public opinion. But if we take the full range of exonerations counts across the historical period we have studied, the expected change in public opinion is only 1.4 percentage points, and there is no long-run effect. Importantly, our earlier findings with regard to the net tone of media coverage did not change when we added exonerations to the model. It is not the occurrence of executions that influences opinion, it is media coverage, specifically its tone, that matters. And although exonerations may exert some direct effect on short-run opinions, they do not affect public opinion in the long run, and the short-term effect is substantively trivial. In sum, the model we present in Table 6.1 is highly robust.

The complicated short-term and long-term effects of each of the variables in Table 6.1 make it hard to understand how public opinion moves, because in the real world, all the variables are shifting at the same time. That is, public opinion at any given time is partly affected by previous changes in homicide rates, media coverage, and dramatic events. But in each period, there are further changes in each of these variables, some working to reinforce each other, some working in the opposite direction, and so the net impact on public opinion of immediate and historic events is very difficult to parse out. We can take our statistical model and substitute hypothetical values for one or another independent variable to see what public opinion *would have been* under different scenarios. That is, we can take our statistical model and set homicides to some level and not allow them to change. Or we can set media coverage to a set level and leave it there. By doing this carefully and one variable at a time, we can see how public opinion would have changed if one variable, and one variable alone, were changing over time. In the real world, everything changes at the same time, but in a computer simulation we can simplify things. Figure 6.6 shows two such scenarios.

The solid line in Figure 6.6 shows our predicted value of net support. The line with black squares (called scenario 1) shows what net support *would have been* if media coverage had never changed from its actual value of +14 in 1993. Under this alternate scenario, public opinion continues to grow more supportive of the death penalty until 1995. It declines after that (largely as the result of observed declines in the number of homicides), but much less sharply than in reality. The series ends with a value

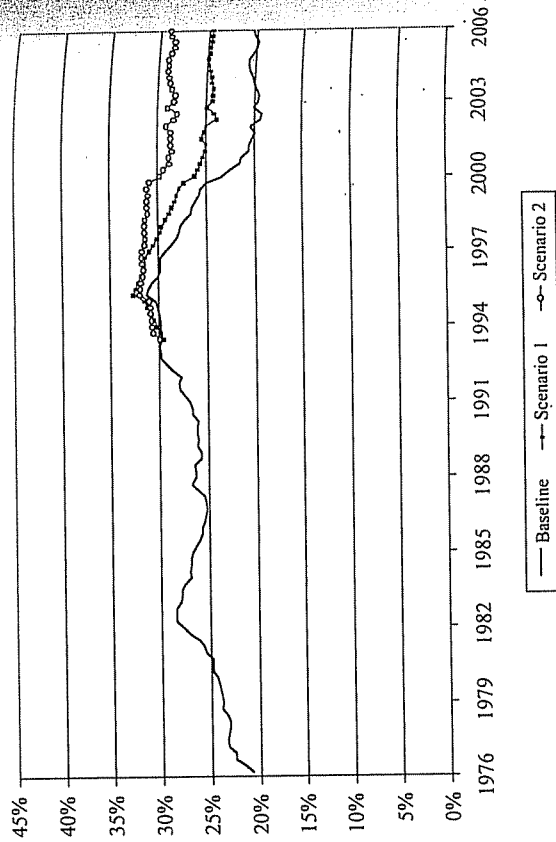


Figure 6.6. Simulating public opinion on the death penalty 1, quarterly from 1976q1 to 2006q1. The figure shows simulated public opinion compared with our baseline prediction. Scenario 1 shows the predicted level of net support if the net tone of media attention had achieved its actual value of +1.4 in the third quarter of 1993 and then remained constant at that level. Scenario 2 shows predicted net support under the case in which homicides reached their value of 6,613 in that same period and then never changed. In each scenario, values for all the other variables in the model retain their actual observed values.

about five points higher than that of the actual observations. The largest gap in the two series comes after 2000, when the net tone of media coverage in fact declined precipitously. Holding our net tone variable constant at its highest value allows us to see what would have happened if these changes had not occurred. Public opinion would have declined from its peak more pro-death penalty, but it still would have declined from its peak because of the decline in homicides. Because the hypothetical series ends up, several years later, at a level five points higher than the actual series, we can attribute this difference solely to the impact of the observed changes in media coverage. In fact, the net tone of media coverage went down, then up, over this time. If it had reached its high point in 1993 and stayed there, public opinion in 2006 would have been five points higher than in fact it was.

The line with empty circles in Figure 6.6 (scenario 2) presents the case in which media coverage follows its actual course, but we hold the number of homicides constant at 6,132, the value it actually reached in the third quarter of 1993, and very close to its all-time maximum. Comparing the

Table 6.2. *The impact of various scenarios on public opinion, quarterly*

Hypothetical scenario	Projected impact on net support
Reduce net tone of media coverage by 50	-7.46
Reduce homicides by 2,000	-6.80
Have an event twice as powerful as the mass commutation by Ill. governor Ryan	-1.62
Both 1 and 2	-14.27
All three events	-15.89

Note: The table shows the long-term impact on net public opinion of each change in the independent variables (net tone and homicides) as listed. Individual events, occurring just once, have only a short-term impact that deteriorates after several quarters, and so we show only the short-term impact of the mass commutation in Illinois. All the impacts are symmetrical, so the impact of net tone, homicides, or events moving opinion in the pro-death penalty direction would be equal in size to those shown here.

distance between this line and the dark solid line allows one to see the impact of declining homicides on public opinion. In all, had homicides not been on the decline from 1993 onward, we would expect net support in 2006 to be nine points higher in a pro-death penalty direction than we in fact observe.

We can, of course, manipulate our hypothetical model of public opinion in any way we want to consider a variety of counterfactuals. Table 6.2 shows some alternative scenarios and the resulting impact on net support.

Table 6.2 shows the impact of various possible changes to the tone of media coverage surrounding the death penalty, the number of homicides, and significant events. All these events are symmetrical, so when the table shows that a movement of fifty points toward more critical news coverage would lead to a decline in net support of about seven and a half points, that also means that the opposite would be true: Opinion would move in the pro-death penalty direction by the same amount if media coverage shifted by the equivalent amount in that direction. It is impossible to say, of course, what are the most reasonable possible scenarios to consider. However, the movements we illustrate here are all within the realm of what has occurred in the past. The net tone of media coverage, as we noted, has in fact shifted quite dramatically, by more than sixty points, in the past twenty years, and the number of homicides has shifted by well over the 2,000 murders we illustrate in the table. Only the events series has been manipulated more significantly than what we have observed. This is because each event is unique, and in any case, most of the impact of these events is reflected in the change in the tone of media coverage. The impact of an event twice as strong as the most powerful one we have yet observed

would be just two points, over and above its impact on media coverage.<sup>18</sup> Of course, that effect would probably be quite substantial because such an event would be highly newsworthy.

What would be the overall effect of the various counterfactual scenarios we have considered? It could easily move net support by twenty points in one direction or another. Looking back at Figure 6.3, which shows this series over the past forty years, it is clear that if opinion shifted by twenty points in the downward direction, overall opinion would be significantly below zero; a majority would oppose the death penalty. This number would be even more substantially biased in the anti-death penalty direction if the question posed to the public specified the option of life without parole, which as we noted, is available in forty-eight of the fifty states. Public opinion on the death penalty changes only slowly. But it does change, and it changes predictably in response to changes in the environment. It is impossible to say what developments might occur with regard to homicide rates and media coverage of the death penalty in the years to come. Opinion could shift toward a pro-death penalty direction. But we have shown a combination of forces here that could easily move American public opinion in a way that would support a drastic reduction in the use of the death penalty, if not its complete elimination.

Figure 6.7 illustrates two alternative scenarios. This is largely the same information from Table 6.2, but graphing it over time shows the slowly evolving nature of the trends. The simulations are very simple. We picked an arbitrary time period, in this case 1992, and substituted alternative values for the observed figures for homicides and net tone. In the first scenario, we added fifty points to whatever the actual net tone of media coverage was in each quarter. So if the net tone in any given period was +15, we made it +65. We did the same to homicides, adding 2,000 to each value. Comparing scenario 1 with the baseline, our actual predicted values, shows that the events take some time to reach their impact, but that after several years the two series are perfectly parallel to each other. The series are fifteen points apart.

Scenario 2 in Figure 6.7 represents the opposite case, with media coverage fifty points more negative in tone and homicides 2,000 cases lower than actually observed. Like the first series, this one takes several years to allow these manipulations to reach their full impact, but after that time, it is consistently fifteen points lower than the baseline.

The scenarios we present may appear unrealistic. Public opinion does not move that much; over the period of our quarterly analysis, after all, net support has remained within a range of +17 to about +35. But in fact, what we really know about public opinion is mostly that it moves slowly. Over the forty-year period at which we have looked, net support has ranged from just below 0 (in 1967) to 35 (in 1994). If other factors were to change, in particular the nature of political and media-related

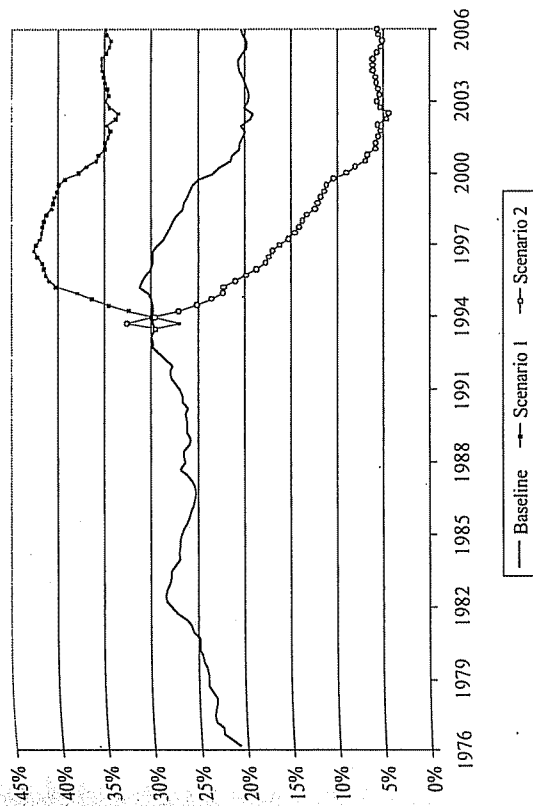


Figure 6.7. Simulating public opinion on the death penalty II, quarterly from 1976q1 to 2006q1. The figure shows simulated public opinion compared with our baseline prediction. Scenario 1 shows the trace that public opinion would have followed if, in 1992 and thereafter, media coverage was fifty points more positive than actually observed, there were 2,000 more homicides per quarter, and the Illinois mass clemency in January 2003 had not occurred. Scenario 2 presents the opposite: media coverage fifty points more negative, 2,000 fewer homicides, and the Illinois event having twice its observed impact.

discussions of the death penalty, then we could easily see changes in public opinion. It would take some time for these changes to affect aggregate public sentiment, but sustained movement can have a strong impact.

## CONCLUSIONS

In this chapter, we construct a new measure of public opinion on the death penalty, the most comprehensive assessment of trends over time in public sentiment on the topic ever assembled. The results of this survey analysis show that public opinion is highly inertial. The American public supports the death penalty, by and large. But public sentiment has waxed and waned gradually over time, moving toward greater support during the 1970s and 1980s and in the first several years of the 1990s, as media coverage and the number of homicides both also trended in the direction of pro-death penalty positions. An important shift occurred in the mid-1990s, however, as the idea of “innocence” began to have a significant impact on the nature of public discussion surrounding this topic, and as

the number of homicides began a long decline. Today, more Americans support than oppose the death penalty when queried using the standard survey questions. However, these numbers are significantly lower when the question offers the option of life without parole. Our analysis here has suggested that public opinion, in the aggregate, responds in a meaningful, logical, and consistent fashion to changes in the environment surrounding this issue. Facts matter. Newspaper coverage matters. The tone of discussion matters. Significant events matter. The public responds to these things in the aggregate, and aggregate public opinion therefore shifts in response to these trends.

One interesting element about public opinion regarding the death penalty is how hypothetical the questions are concerning it. In the next chapter, we move from looking at public opinion in general to the actual behavior of prosecutors, defense attorneys, judges, and juries in America's courtrooms, and we do so in a form that directly parallels the analysis presented in this chapter. The people involved in courtroom drama associated with the death penalty are faced with anything but a hypothetical, theoretical discussion; rather, they deal literally with questions of the life and death of an individual sitting in front of them. As we see in Chapter 7, many of the same factors that we have seen to affect public opinion in this chapter also affect the behaviors of juries and therefore the annual number of death sentences imposed across the country, but the degree of change we have witnessed in response to the rise of the innocence frame is much more substantial. Change comes quicker when the question moves from the theoretical to the individual, and there is reason to expect that the innocence frame would have its greatest impact here. Many could truthfully say they support the death penalty in response to a generically worded survey question, but not impose it in a case before them because of doubts about the perfection of the system. We turn to this question in the next chapter when we examine the effects of framing on policy.

APPENDIX

Table 6.A1. *Explaining public opinion on the death penalty, quarterly from 1976q1 to 2006q4*

	Support for the death penalty	Opposition to the death penalty
	Short-run (change in opinion)	Long-run (equilibrium)
Net tone <sub>t-1</sub>	0.081 <sup>a</sup>	-0.068 <sup>a</sup>
Homicides <sub>t-1</sub> (in thousands)	(0.026)	(0.023)
	1.735 <sup>b</sup>	1.677 <sup>b</sup>
	(0.399)	(0.355)
Constant	54.352 <sup>b</sup>	45.403 <sup>b</sup>
	(2.050)	(1.824)
Deviation from long-run equilibrium <sub>t-1</sub>	-0.175 <sup>b</sup>	-0.172 <sup>b</sup>
	(0.090)	(0.079)
Change in net tone <sub>t</sub>	0.017	-0.015
	(0.045)	(0.045)
Change in homicides <sub>t</sub>	-1.304	0.915
	(0.011)	(0.009)
Change in death penalty events <sub>t</sub>	0.304	-0.506
	(1.010)	(0.885)
	(0.403)	(0.351)
N	119	120
R-squared	0.124	0.433
RMSE	0.985	1.917
StDev	1.034	2.583

Note: Data are quarterly from the first quarter of 1976 to the first quarter of 2006. Entries are regression coefficients (standard errors in parentheses). The dependent variables are from Figure 6.4.  
<sup>a</sup> p > 0.05.  
<sup>b</sup> p > 0.001.