

Alternative Tests for the Effects of Campaigns and Candidates on Voting Behavior

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DO CANDIDATES AND CAMPAIGNS influence voting behavior? In order to answer this question, scholars often associate the former with the latter. For example, in their analysis of the 1992 U.S. presidential election, Alvarez and Nagler (1995) find a significant effect of voters' preferences regarding abortion policy and link it to the candidates' positions: "Some issues raised during the campaign did matter. . . . [G]iven the powerful influence of abortion in determining respondents' vote choices it appears that Bush's pro-life stance was quite costly. The family values night at the Republican convention may have imposed substantial political costs on Bush" (738–39).

The validity of an inference that links a campaign factor to a variable that influences voting behavior depends on what one would observe in the counterfactual condition. If the candidates and their campaigns matter, then one would find a smaller, and perhaps nonexistent, effect in the counterfactual condition. In the context of the example just given, if voters responded to Bush's pro-life position and the emphasis on family values at the Republican convention (which contrasted with the pro-choice position espoused by Bill Clinton), then had Bush been pro-choice, voters' abortion policy preferences would not have influenced their ballot choices.

Of course, counterfactual conditions cannot be observed, and analysts are consequently faced with what Holland (1986, 947) has called "the Fundamental Problem of Causal Inference." This essay describes and

demonstrates several research designs that address this problem. The key to all of the approaches are comparisons that attempt to approximate the counterfactual condition. To the extent that they are successful, the persuasiveness of causal claims (one way or the other) regarding the influence of campaigns and candidates is enhanced.

Scope of the Analysis

U.S. Senate elections are the focus of the empirical investigation in this essay. Two considerations make this an attractive choice. First, because there are over thirty Senate elections in any election year, one can observe and measure variation in election-level variables. Second, because of a relatively recent data collection effort (Miller et al. 1993), there now exists a valuable source of individual-level survey data, the Senate Election Studies, that may be used to study voting behavior in Senate elections.¹ All the research designs employed in this essay depend on the interaction between variables at individual and election levels. Obtaining data at both levels is therefore crucial.²

Abortion policy is the substantive focus of the analysis. Several factors make it an appealing issue to analyze. In the wake of the Supreme Court's 1989 ruling in *Webster v. Reproductive Health Services* that granted states more freedom to restrict abortions, abortion policy gained greater national prominence. Congress passed two appropriation bills that President Bush vetoed because of what he said were inadequate abortion restrictions. Later in the year, supporters of abortion rights introduced the Freedom of Choice Act, a bill intended to codify the principles of *Roe v. Wade*. Equally important, from an analytical perspective, Senate candidates, sometimes, but not always, adopt different positions regarding abortion policy.³ Although the national party platforms have contrasted greatly since 1980,⁴ pro-life Democrats and pro-choice Republicans are not uncommon among Senate candidates. At the individual level, the possibility of abortion policy voting exists because most voters have opinions regarding abortion. In addition, whereas voters are susceptible to persuasion by the candidates on some issues about which they care less deeply, individuals' abortion views are unlikely to be changed by Senate candidates and their campaigns.⁵ Therefore one can be confident that, for an observed relationship between abortion policy preferences and candidate choice, causality runs from the former to the latter, not vice versa.

The primary hypothesis to be investigated specifies that voters

respond to abortion policy positions of the Senate candidates. If the candidates hold opposing views, then voters' abortion positions will influence their ballot choices. If the candidates share similar views, then voters' abortion positions will not be of consequence for whom they vote. In other words, the hypothesis specifies that candidates' positions are a cause of the level of policy voting.⁶

Data and Measurement

The sixty-six contested U.S. Senate races in 1990 and 1992 constitute the sample of Senate elections considered.⁷ A dichotomous variable that indicates whether the Senate candidates held similar or opposing abortion positions is the primary election-level variable.⁸ To classify each of the races, I conducted an extensive search of the LEXIS/NEXIS on-line campaign library. The campaign library is an especially useful data source because it contains numerous national campaign periodicals such as *The Cook Political Report*, *The Hotline*, and *The Abortion Report* in addition to a large number of local newspapers. A preliminary search using the keywords "Senate" and "abortion" made possible the classification of many of the races. Follow-up searches that focused on specific campaigns enabled me to complete the codings. Overall, thirty-five of the sixty-six races involved candidates who held different positions regarding abortion policy.⁹ Of the remaining thirty-one, twenty races had candidates who were both pro-choice, and in eleven, both candidates were pro-life.

Of obvious importance for distinguishing abortion policy voting is a measure of voters' abortion policy preferences.¹⁰ The 1990 and 1992 Senate Election Studies provide the data. Answers to three questions combined into a single trichotomous measure serve as the indicator of abortion policy preferences, which measures the level of opposition to abortion restrictions.¹¹

Isolating the effects, if any, of abortion policy preferences on voting behavior requires a model that takes into account other political attitudes. In general, those more supportive of restrictive abortion policies tend to have more conservative policy preferences and identify as "conservatives" and "Republicans." In a model that only included voters' abortion policy preferences, the parameter estimate might merely pick up effects that theoretically should be captured by variables that measure general policy liberalism, ideological and partisan identification.¹²

Three variables tapping voters' general political orientations are

used in order to distinguish the independent effects of voters' abortion policy preferences. The first is the traditional National Election Studies (NES) measure of party identification.¹³ The second is a measure of general policy liberalism, which is made up of answers to ten policy questions. The third is ideological self-identification. Voters were categorized as "conservative," "liberal," or "moderate."¹⁴

Designs and Results

Basic Design

With the preliminaries out of the way, recall that the primary hypothesis of interest specifies that voters respond to the policy positions of Senate candidates. Specifically, if the candidates hold opposing abortion positions, voters' preferences regarding abortion policy exert a greater effect on their ballot choices than if the candidates hold similar abortion policy positions. I will refer to this as the responsiveness hypothesis.

Before directly addressing the issue of causality, the first step of the analysis will be to ascertain whether there exists a connection between individuals' abortion policy preferences and their votes in the Senate races, where one candidate was pro-choice and the other was pro-life. If the responsiveness hypothesis is correct, then this relationship should be apparent.

The results reported in table 1 clearly suggest that voters' opinions regarding abortion policy influenced their ballot choices in races where the

TABLE 1. Logit Parameter Estimates of Voting for the Democratic Senate Candidate (races in which the candidates held different abortion policy positions)

Variable	Parameter Estimate	Standard Error
Abortion views	.88	.19
Party identification	1.84	.17
Ideological self-identification	.81	.20
Policy liberalism	.54	.19
Incumbency	.82	.08
Number of observations: 1,262		
Log-likelihood: -626.5		

Source: Pooled Senate Election Studies and data collected by author.

Note: Each of the independent variables listed in the table was coded as a trichotomy ranging from 0 (least liberal/Democratic) to 1 (most liberal/Democratic). See essay and appendix for details. Although they are not reported, the model includes an intercept and variables indicating age, education, family income, gender, race, and religion.

Senate candidates held different abortion positions. In the elections where the Democratic candidate was pro-choice and the Republican candidate was pro-life, the multivariate model estimates indicate that voters who supported less restrictive abortion laws were more likely to vote for the Democratic Senate candidate. In these races, with the exception of party identification, voters' opinions regarding abortion exerted the largest effect on their ballot choices. For an otherwise indifferent voter, the logit estimate of .88 suggests that favoring less, rather than more, restrictive abortion laws increased the probability of voting for the Democratic candidate by .22.¹⁵

Although finding an effect of abortion views in elections where the candidates held opposing positions is necessary for the responsiveness hypothesis to be true, it is far from sufficient. There are a variety of competing hypotheses that predict the same relationship. Thus the statistical results have yet to provide any strong evidence regarding the cause of the relationship between abortion policy preferences and voting behavior. For example, Jacobson and Wolfinger (1989) analyzed a California Senate race in which the candidates held different positions on the Equal Rights Amendment (ERA) and showed a connection between individuals' opinions of the ERA and their votes. They hesitated, however, to conclude that voters were responding to the candidates.

An issue question may simply identify a subset of voters with a particular political bias; for example, other things being equal, people who favor the ERA may also favor liberal Democrats like Alan Cranston and might have supported him just as consistently had Gann [the Republican] endorsed the ERA, killing it as a campaign issue. Just because an issue position is related to the vote does not mean that the issue itself influenced the vote. (526)

Jacobson and Wolfinger cite one plausible alternative. Voters with particular policy preferences may simply habitually vote for candidates of one of the parties. There are other plausible explanations too. These alternative hypotheses will be assessed in the ensuing sections as more elaborate research designs are introduced.

The more general point is an important one. Hypotheses about campaign effects, be they the responsiveness one investigated here or others, specify that voting behavior is influenced by election and campaign

characteristics. To test these hypotheses, it is therefore important to demonstrate that variation in election characteristics is associated with variation in voting behavior.¹⁶ The "basic" design provides no variation in the campaign variable of interest and therefore can provide no information about how voting behavior might be different if the election context were different.¹⁷ This is a limitation that analysts of presidential elections often face. For instance, was the abortion policy voting that Alvarez and Nagler (1995) identified in the 1992 presidential election caused by the candidates' opposing positions? With only a single election, it is impossible to tell.

Multiple Races Design

Ideally, one would compare the effect of voters' views regarding abortion policy in races where the candidates held different positions to the effect of abortion opinions in the counterfactual condition of the candidates sharing similar abortion positions. But the fundamental problem of causal inference prevents conducting this test. However, there are a number of comparisons that can be made that will help explain why abortion policy opinions affect voting behavior in the races where the candidates held different abortion positions.

Not all Senate races are contests between pro-choice Democrats and pro-life Republicans. In nearly half of the campaigns, both candidates held similar positions regarding abortion policy. If voters respond to the candidates' positions, then the effect of their abortion policy preferences will be smaller, perhaps nonexistent, in those races where the candidates' positions were similar. On the other hand, if voters do not respond to the candidates, and instead those more and less supportive of restrictive abortion laws habitually favor Republicans and Democrats, respectively, then the effect of abortion policy preferences will not vary across campaign contexts. A similar lack of variation will be observed if voters respond to the national parties' abortion positions rather than those of the Senate candidates, because the parties' positions are constant across election contexts.

The findings reported in table 2 address these issues. The voting models were estimated over the entire set of Senate elections. The first two columns of the table report the estimates from a model that constrains the effects of the parameters to be identical across campaign types. The third

and fourth columns display the estimates of a model that permits the effects of the independent variables to vary across election contexts.¹⁸ The results suggest that there is variation in voting behavior associated with whether the candidates held similar or different positions regarding abortion policy. Comparing the log-likelihoods of the two models, one finds an improvement in fit to the data with the unconstrained model that would probably not be evident if the determinants of vote choice were identical in both types of elections ($p < .01$).

Notice the pattern of differences in parameter estimates between races where the candidates held similar abortion positions and those where the candidates' positions were different. The unconstrained model estimates indicate that, in contrast to the substantial effect of abortion opinions in races where the candidates held different positions, there was virtually no effect of voters' abortion views in races where the candidates' positions were similar. This finding suggests that the initial observed relationship between abortion policy preferences and Senate voting behavior

TABLE 2. Logit Parameter Estimates of Voting for the Democratic Senate Candidate (multiple races design)

	Constrained Model		Unconstrained Model	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Abortion views	.46	.14	-.02	.21
Abortion views × candidates' positions	—	—	.88	.28
Party identification	2.04	.12	2.31	.19
Party identification × candidates' positions	—	—	-.47	.24
Ideological self-identification	.78	.15	.85	.23
Ideological self-identification × candidates' positions	—	—	-.08	.30
Policy liberalism	.66	.14	.77	.21
Policy liberalism × candidates' positions	—	—	-.20	.28
Incumbency	1.00	.06	1.29	.10
Incumbency × candidates' positions	—	—	-.48	.13
Candidates' positions	—	—	.01	.23
Number of observations: 2,416				
Log-likelihood of constrained model: -1,169.7				
Log-likelihood of unconstrained model: -1,156.9				
p -value for difference: .0003				

Source: Pooled Senate Election Studies and data collected by author.

Note: Candidates' positions is coded 0 for races in which both Senate candidates held similar abortion policy positions and 1 for races in which the candidates held different positions. Each of the other independent variables listed in the table is coded as a trichotomy ranging from 0 (least liberal/Democratic) to 1 (most liberal/Democratic). See essay and appendix for details. Although they are not reported, both models include constants and variables indicating age, education, family income, gender, race, and religion.

(table 1) cannot properly be explained by either the habit or national party responsiveness hypotheses.

The results displayed in table 2 also permit the rejection of another competing explanation. Westlye (1991) argues that campaign intensity causes a greater level of policy voting because voters are provided sufficient information in hard-fought races to base their decisions on policy considerations. The model estimates reported in table 2 do not provide a direct test of Westlye's hypothesis, but they do rule out the possibility that Westlye's theory explains the pattern of results. If the cause of the larger effect of abortion views in races where the candidates' positions were different was to be found in higher levels of campaign intensity in those races, then the magnitudes of the effects of the other independent variables would be larger too. This is decidedly not the case. With the exception of abortion policy preferences, in elections where the candidates held different abortion positions the parameter estimates of the effects of all the independent variables are *smaller*.

Comparing the effects of independent variables in different campaign settings falls under Brady, Johnston, and Sides's (this volume) rubric of a "multiple races design."¹⁹ The design is more powerful than a simple cross-sectional design that investigates a single election, or a set of elections, in which no variation in the campaign variable of interest is observed. Its use has led to the rejection of three rival explanations for the initial finding of a substantial effect of abortion views on voting behavior. If these were the only competing hypotheses, then concluding in favor of the responsiveness hypothesis would be warranted. But there are additional explanations that cannot be tested with the multiple races design. Consequently, other research designs should be considered.

Stacked Elections/Judgments Designs

Recall again the counterfactual condition associated with the set of observed candidates with different abortion positions. If, instead, their positions were similar, the responsiveness hypothesis predicts that the effect of abortion views on voting behavior would be diminished. The multiple races design approximates a comparison between observed and counterfactual conditions to the extent that differences other than the candidates' positions are minimized between the two types of campaigns. If candidates' positions were randomly assigned, then the multiple races design would

constitute a controlled experiment and further analysis would be unnecessary. With little reason to assume this to be true, prudence dictates either confirming the validity of this possibility or employing a research design that can distinguish selection effects from the causal effects of candidates' policy positions. Otherwise, one cannot confidently interpret the findings.

Although the multiple races design permitted the rejection of the hypothesis that candidates' positions were merely a proxy for campaign intensity, the possibility of a spurious relationship remains. Wright and Berkman (1986) introduce another rival hypothesis.

If some states have political cultures more disposed to ideological politics than others, then we might observe a correlation between candidate polarization and ideological voting even if voters were not responding to specific candidates. From this perspective, candidate polarization measures an aspect of political culture rather than the specific stimuli affecting voters. (578)

Not only might some states have more ideological politics in general, but the nature of abortion politics might also vary by state. For example, several studies have emphasized state differences in interest group activity and mobilization (Cohen and Barrilleaux 1993; Hansen 1993; Meier and McFarlane 1993). My own analysis of election exit polls reveals varying levels of partisan polarization within states regarding abortion policy preferences.

The general point is that the relationship between candidates' positions and voting behavior revealed by the multiple races design might not be causal. Both the level of abortion policy voting and the Senate candidates' positions might be caused by relatively fixed state characteristics. If this is true, then candidates' positions are simply epiphenomenal, associated with, but not the cause of, the level of abortion policy voting.

To determine whether Senate candidates' abortion positions truly cause the level of abortion policy voting or are simply an indicator of states' political cultures, a design that controls for fixed state effects must be employed. One possibility entails directly measuring aspects of state political cultures and including them in a multiple races design along with the Senate candidates' positions. This approach entails several disadvantages that suggest that another alternative should be sought. First, measuring the various dimensions of state political culture is no easy task. Second,

even if valid indicators could be constructed, including them in voting models might result in levels of multicollinearity that would substantially diminish the possibility of obtaining precise estimates of the myriad state- and election-level effects.

A different approach that can distinguish fixed state effects from those of the candidates' positions is referred to as a "stacked design" by Brady, Johnston, and Sides (this volume). If aspects of state political cultures cause the level of policy voting in Senate elections, then these same factors would lead people to rely more heavily on their abortion opinions when making other political judgments too. For example, if abortion politics are especially salient in a particular state, then residents of that state will rely on their opinions regarding abortion when voting for senator and making other political judgments, such as assessing the president. In contrast, if the greater effects of voters' opinions regarding abortion policy on Senate voting are caused by candidates' holding contrasting abortion positions, then Senate candidates' abortion positions will not be associated with larger effects of voters' abortion opinions on other political judgments.

Stacked designs include dependent variables other than the primary one of interest. If similar variation in the magnitudes of estimated effects are found for the additional dependent variables, then attributing the variation in the magnitudes of the estimated effects of the independent variables on the primary dependent variable to a campaign characteristic is unwarranted.

In the present case, two additional dependent variables are available, voting for the House of Representatives and presidential approval. If the responsiveness hypothesis is correct, then the Senate candidates' positions will not be associated with the magnitude of the relationship between abortion opinions and House voting and presidential approval. If the candidates' positions merely reflect an aspect of state political cultures, then the observed relationship between Senate candidates' positions and voting for the Senate will also be apparent if either House voting or presidential approval is substituted for Senate voting.²⁰

Tables 3 and 4 report the model estimates of voting for the Democratic House candidate and disapproval of President Bush, respectively.²¹ Neither provides evidence for the fixed state effects hypothesis. To the extent that differences do exist, the parameter estimates suggest a *smaller* effect of abortion policy preferences on House voting and presidential approval in the states where the Senate candidates held different abortion

TABLE 3. Logit Parameter Estimates of Voting for the Democratic House Candidate (stacked design)

	Constrained Model		Unconstrained Model	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Abortion views	.28	.15	.39	.20
Abortion views × candidates' positions	—	—	-.24	.28
Party identification	2.04	.12	1.98	.17
Party identification × candidates' positions	—	—	.14	.24
Ideological self-identification	.74	.15	.53	.22
Ideological self-identification × candidates' positions	—	—	.43	.31
Policy liberalism	.33	.14	.25	.20
Policy liberalism × candidates' positions	—	—	.15	.28
Candidates' positions	—	—	-.27	.20
Number of observations: 2,091				
Log-likelihood of constrained model: -1,098.0				
Log-likelihood of unconstrained model: -1,095.2				
p-value for difference: .35				

Source: Pooled Senate Election Studies and data collected by author.

Note: Candidates' positions is coded 0 for races in which both Senate candidates held similar abortion policy positions and 1 for races in which the candidates held different positions. Each of the other independent variables listed in the table is coded as a trichotomy ranging from 0 (least liberal/Democratic) to 1 (most liberal/Democratic). See essay and appendix for details. Although they are not reported, both models include constants and variables indicating age, education, family income, gender, race, and religion.

TABLE 4. Logit Parameter Estimates of Disapproval of President Bush (stacked design)

	Constrained Model		Unconstrained Model	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Abortion views	.65	.15	.76	.21
Abortion views × candidates' positions	—	—	-.22	.28
Party identification	1.83	.12	1.69	.18
Party identification × candidates' positions	—	—	.29	.24
Ideological self-identification	.81	.15	.90	.21
Ideological self-identification × candidates' positions	—	—	-.20	.29
Policy liberalism	.54	.14	.47	.21
Policy liberalism × candidates' positions	—	—	.15	.28
Candidates' positions	—	—	.27	.23
Number of observations: 2,251				
Log-likelihood of constrained model: -1,113.3				
Log-likelihood of unconstrained model: -1,107.3				
p-value for difference: .03				

Source: Pooled Senate Election Studies and data collected by author.

Note: Candidates' positions is coded 0 for races in which both Senate candidates held similar abortion policy positions and 1 for races in which the candidates held different positions. Each of the other independent variables listed in the table is coded as a trichotomy ranging from 0 (least liberal/Democratic) to 1 (most liberal/Democratic). See essay and appendix for details. Although they are not reported, both models include constants and variables indicating age, education, family income, gender, race, religion, and survey year (1992 versus 1990).

positions. Thus the possibility that fixed characteristics of the states explain the observed relationship between the level of abortion policy voting and Senate candidates appears less likely.

Controlled Constituencies/Multiple Races Designs

The stacked design helped to rule out the general hypothesis of fixed state effects. However, there remains a more narrow version of the hypothesis. There may be fixed state effects with respect to particular election types or constituencies. For example, within states, consistent patterns of voting behavior may be apparent in statewide elections generally or Senate elections in particular. Analyzing presidential approval and House voting would not pick up this sort of effect. Another approach is necessary.

One conceptual possibility entails analyzing multiple Senate elections in the same state. Consider, for example, the California Senate races in 1992. In that year, two Senate elections were held, one for a regular six-year term and another for the remaining two years of a vacated seat. In one of these races, the candidates held opposing abortion positions.²² In the other, both candidates were pro-choice.²³ The responsiveness hypothesis predicts that individuals' preferences regarding abortion policy would be more strongly related to voting behavior in the former race compared to the latter. In contrast, if the California political culture determines the level of abortion policy voting in Senate elections, then one would not observe differences across the races.

Although concurrent Senate elections are a rarity, a research design based on the logic of analyzing them may be developed and implemented. The Senate studies include data from Senate elections in 1990 and 1992. As a result, there is some overlap between races and states. Sixteen states held elections in both years. In four, both candidates were pro-life in each election. In five others, both were pro-choice in each election. In seven states, however, one of the elections pitted candidates who held different abortion positions, while in the other race the candidates held similar abortion positions. This latter group of states provides some variation in candidate positions that is independent of any fixed state characteristics. Consequently, if candidates' positions cause the degree to which voters' abortion opinions affect their votes, then the effect of abortion opinions should be greater in the seven races where the candidates held different positions. I term this a "controlled constituency multiple races design."

Table 5 presents model estimates that appear to further rule out the fixed state characteristics hypothesis. Overall the unconstrained model fits the data better and provides a considerable degree of confidence that the improvement in fit is not merely due to chance ($p < .01$). In addition, the pattern of coefficients is remarkably similar to those from the simple multiple races design. The estimated effect of voters' abortion policy preferences increases in the races where the candidates held different abortion positions, whereas the estimated effects of all the other independent variables are diminished in this campaign context.²⁴

Summary and Conclusion

Moving beyond the basic research design that analyzes voting behavior in races where the Senate candidates held contrasting abortion positions has proven to be a valuable strategy. Each subsequent design helped rule out plausible explanations for the initial observed relationship between voters'

TABLE 5. Logit Parameter Estimates of Voting for the Democratic Senate Candidate (multiple race controlled constituency design)

	Constrained Model		Unconstrained Model	
	Parameter Estimate	Standard Error	Parameter Estimate	Standard Error
Abortion views	.75	.30	.54	.47
Abortion views × candidates' positions	—	—	.44	.60
Party identification	2.13	.28	2.32	.45
Party identification × candidates' positions	—	—	-.42	.57
Ideological self-identification	.80	.31	1.02	.53
Ideological self-identification × candidate's positions	—	—	-.15	.66
Policy liberalism	.60	.31	.76	.51
Policy liberalism × candidates' positions	—	—	-.39	.65
Incumbency	1.61	.17	2.34	.27
Incumbency × candidates' positions	—	—	-1.32	.35
Candidates' positions	—	—	.50	.48
Number of observations: 580				
Log-likelihood of constrained model: -261.8				
Log-likelihood of unconstrained model: -250.1				
p -value for difference: .0007				

Source: Pooled Senate Election Studies and data collected by author.

Note: Candidates' positions is coded 0 for races in which both Senate candidates held similar abortion policy positions and 1 for races in which the candidates held different positions. Each of the other independent variables listed in the table is coded as a trichotomy ranging from 0 (least liberal/Democratic) to 1 (most liberal/Democratic). See essay and appendix for details. Although they are not reported, both models include constants and variables indicating age, education, family income, gender, race, and religion.

abortion policy preferences and their ballot choices. Of course, there are always more possibilities. Consequently, concluding with absolute certainty that voters respond to the Senate candidates' abortion policy positions would be going too far. Nevertheless, as a result of employing the varied research designs discussed in this essay, confidence in the validity of the responsiveness hypothesis has been substantially enhanced; it is the only one of the considered hypotheses left standing.

More generally, none of the designs discussed in this essay are limited in their applicability to U.S. Senate elections. Nor are they exclusively limited to situations where there are numerous elections. Consider a concrete example regarding presidential elections. In their analysis of the 1988 election between George Bush and Michael Dukakis, Shanks and Miller (1991) found a substantial effect of voters' opinions regarding the death penalty on ballot choices. Those more supportive of using the death penalty were more likely to vote for Bush. In contrast, their analysis of the 1992 presidential election (Miller and Shanks 1996) revealed that voters' opinions regarding the death penalty were unrelated to ballot choices. Comparing the effect of the death penalty opinions in these two campaigns constitutes a "controlled constituency design" and lends support to the notion that voters respond to presidential candidates' policy positions.

To be sure, the research designs discussed in this essay do have a weakness. They are better at identifying a causal factor than revealing the causal process by which voters eventually respond to it. That is, the findings reported here have suggested that voters respond to Senate candidates' policy positions without illuminating exactly how this happens. However, the somewhat lengthy list of plausible hypotheses that have been falsified attests to the value of the approaches employed in this essay.

APPENDIX: Coding and Univariate Statistics

A. Measurement

Voters' preferences regarding abortion policy were measured using responses to three questions:

1. Do you think abortion should be legal under all circumstances, only legal under certain circumstances, or never legal under any circumstance?

2. Would you favor or oppose a state law that would require parental consent before a teenager under eighteen could have an abortion?
3. Would you favor or oppose a law in your state that would allow the use of government funds to help pay for the costs of abortion for women who cannot afford them?

Questions 2 and 3 included follow-ups to ascertain whether individuals' support or opposition was "strong" or "not strong." Answers to each of the three questions were coded to range from 0 (favoring more restrictive abortion policies) to 1 (favoring less restrictive abortion policies) and averaged to produce a single scale of abortion support. The average inter-item Pearson's correlation of the scale components is .35, and the coefficient of reliability (Cronbach's alpha) of the scale is .62.

A trichotomized version of the scale was constructed by placing roughly equal numbers of respondents into each of three categories. Simplifying the scale in this manner substantially eases the interpretation of the multivariate model estimates without altering the pattern of results. The one-third of the sample least supportive of minimal abortion restrictions are coded 0; those most supportive are coded 1; the remaining one-third are coded .5.

The policy liberalism scale is based on answers to ten questions. Eight of the items are from a battery of questions in which respondents were asked the following: "If you had a say in making up the federal budget this year, for which of the following programs would you like to see spending increased and for which would you like to see spending decreased?" The programs included in the scale are the environment, public schools, food stamps, fighting the disease AIDS, child care, defense spending, medical care, and government assistance for the homeless. Responses to two additional questions regarding the death penalty and government assistance for blacks were also included in the scale of policy liberalism. To construct the scale, each variable was coded to range from 0 (least liberal) to 1 (most liberal). Respondents' average responses were used to indicate their general level of policy liberalism. (Those with missing data for an item were assigned its mean value. Respondents who answered less than half the items, fewer than 1 percent of the voters in the Senate studies, were excluded from the analysis.) Like the abortion scale, a trichotomous

indicator with an equal number of respondents in each category is used in the multivariate analyses. Those respondents with the least and most liberal policy preferences receive codes of 0 and 1, respectively. The middle one-third of the respondents are coded .5.

The measure of ideological self-identification is based on voters' answers to a set of questions about their political ideology. Respondents were asked to place themselves on a seven-point scale ranging from very liberal to very conservative. Those who did not provide an answer either because they had not "thought much about it" or "did not know" were then asked, "If you had to choose, would you consider yourself a liberal or a conservative?" Respondents who placed themselves on the conservative side of the seven-point scale or answered "conservative" in the follow-up question are coded as conservatives and receive a value of 0 on the ideological self-identification scale. Respondents who placed themselves on the liberal side of the seven-point scale or answered "liberal" in the follow-up question are coded as liberals and receive a value of 1 on the scale. The remaining respondents are classified as moderates and coded .5.

B. Univariate Statistics

The distributions, means, and standard deviations of the variables used in the multivariate analyses are reported in the following table.

Variable	Categories	Distribution (%)	Mean	Std. Dev.
Abortion policy preferences	Less supportive of liberal abortion laws (0)	30	.49	.38
	Mixed opinions (.5)	42		
	More supportive of liberal abortion laws (1)	29		
Party identification	Republican (0)	40	.52	.46
	Pure independent (.5)	15		
	Democrat (1)	45		
Ideological self-identification	Conservative (0)	48	.38	.40
	Moderate (.5)	29		
	Liberal (1)	23		
Policy liberalism	Less liberal (0)	33	.50	.41
	Mixed (.5)	34		
	More liberal (1)	33		
Incumbency	Republican incumbent (0)	36	.56	.45
	Open seat race (.5)	16		
	Democratic incumbent (1)	48		

NOTES

1. Westlye (1991) explains the inadequacies of the traditional National Election Studies for analyzing voting behavior in Senate elections.
2. Of course, other elections, namely those for the House, share these characteristics of Senate elections. In principle, the research designs employed here could be used for the analysis of House elections too. In practice, the task is more complicated because measuring the primary election-level variable, discussed in detail later, proves rather difficult.
3. All the research designs discussed in this essay depend on this feature of Senate elections.
4. For example, there is a stark contrast between the two parties' 1992 platforms. The Republican platform read, in part, "We therefore reaffirm our support for a human life amendment to the Constitution, and we endorse legislation to make clear that the 14th Amendment's protections apply to unborn children." Democrats, on the other hand, stood "behind the right of every woman to choose, consistent with *Roe v. Wade*, regardless of ability to pay, and support a national law to protect that right."
5. In other words, a pro-life voter is unlikely to change her views about abortion because a candidate who she likes for other reasons is pro-choice.
6. It is important to note that, although the substantive focus in this essay is policy voting, the research designs are applicable to a wide variety of possible campaign effects.
7. Data limitations largely determined the selection of races to analyze. The Senate Election Studies were conducted in 1988, 1990, and 1992. However, the items tapping abortion policy preferences were not asked in 1988. In addition, *The Abortion Report*, one of the primary sources of campaign information, was not published in 1988.
8. Although a more nuanced election-level variable might be desirable, reliably and validly constructing one on the basis of the available data is not feasible.
9. In all but two of these races, the Democratic candidate was pro-choice and the Republican candidate was pro-life. The two exceptions occurred in the 1990 campaigns in Alaska and Wyoming, where the Republican candidates were pro-choice and the Democratic candidates were pro-life. Although it would be worthwhile to analyze this type of race where the candidates hold positions at odds with the national parties, the source of individual-level data, the Senate Election Studies, provides less than one hundred cases from these elections, too few to permit any meaningful analysis of them.
10. Wright and Berkman (1986) attempted to analyze policy voting in Senate elections but due to data limitations were unable to employ any measures that tapped voters' policy preferences about particular issues. Instead, they operationalize policy voting as "the propensity of voters to use general policy liberalism-conservatism and evaluations of the president and his handling of the economy in their senatorial voting decisions" (575).
11. The details behind the construction of this measure are described in the appendix.
12. This statement reflects the view that voters' abortion policy preferences do

not determine their other policy preferences and their ideological and partisan identifications. This view is not without its critics. Miller and Shanks (1996) carefully review the issue and provide both a theoretical and methodological defense of the approach adopted here.

13. Republicans, pure independents, and Democrats receive codes of 0, .5, and 1, respectively. Independent leaners are coded as partisans of the party toward which they lean. The empirical results are virtually identical if they are coded as independents.

14. The constructions of these scales are described in the appendix.

15. The corresponding probabilities for party identification, ideological self-identification, policy liberalism, and incumbency are .43, .20, .13, and .20, respectively.

16. To put it another way, the independent variable (a campaign characteristic) must be correlated with the dependent variable (voting behavior.) Of course, observing a correlation between variables does not automatically imply causation. Additional tests are necessary.

17. Campbell and Cook (1979) classify this type of design as "one-group posttest-only" and argue that "if this were all the information we had about the variable [in this case candidates' positions] and the population, the design would be totally uninformative" (96).

18. The estimates in table 1 are not identically replicated (though they are nearly so) by the estimates of the unconstrained model reported in table 2 because the effects of the social and demographic characteristics were assumed to be identical across election types.

19. This is the approach that Cook, Jelen, and Wilcox (1994) employ in their analysis of abortion policy voting in the 1990 Senate elections.

20. Note that "stacked" designs may be used even if one has separate cross-sections, one for each race or judgment. When the respondents are the same, then controlling for individual fixed effects becomes possible, a topic not pursued in this essay.

21. Because Democratic votes were coded 1 and Republican votes coded 0 for both the Senate and House voting models, presidential approval was coded 1 for disapproval of Bush and 0 for approval.

22. This race pitted Barbara Boxer (D) against Bruce Herschensohn (R).

23. In this special election, Dianne Feinstein (D) faced John Seymour (R), the incumbent who had been appointed after Pete Wilson was elected governor.

24. Some caution is warranted because of the comparatively less precision of the effect estimates compared to the simple multiple races design.

REFERENCES

- Alvarez, R. Michael, and Jonathan Nagler. 1995. "Economics, Issues, and the Perot Candidacy: Voter Choice in the 1992 Presidential Election." *American Journal of Political Science* 39:714-44.
- Bendyna, Mary E., and Celinda C. Lake. 1994. "Gender and Voting in the 1992 Presidential Election." In *The Year of the Woman: Myths and Realities*, ed. Elizabeth Adell Cook, Sue Thomas, and Clyde Wilcox. Boulder: Westview.
- Campbell, Donald T., and Thomas D. Cook. 1979. *Quasi-Experimentation: Design and Analysis Issues for Field Settings*. Chicago: Rand McNally.

- Cohen, Jeffrey E., and Charles Barrilleaux. 1993. "Public Opinion, Interest Groups, and Public Policy Making: Abortion Policy in the American States." In *Understanding the New Politics of Abortion*, ed. Malcolm L. Goggin. Newbury Park, CA: Sage.
- Cook, Elizabeth Adell, Ted G. Jelen, and Clyde Wilcox. 1994. "Issue Voting in U.S. Senate Elections: The Abortion Issue in 1990." *Congress and the Presidency* 21: 99–111.
- Hansen, Susan B. 1993. "Differences in Public Policies toward Abortion: Electoral and Policy Context." In *Understanding the New Politics of Abortion*, ed. Malcolm L. Goggin. Newbury Park, CA: Sage.
- Holland, Paul. 1986. "Statistics and Causal Inference." *Journal of the American Statistical Association* 81:945–60.
- Jacobson, Gary C., and Raymond E. Wolfinger. 1989. "Information and Voting in California Senate Elections." *Legislative Studies Quarterly* 14:509–27.
- Meier, Kenneth J., and Deborah R. McFarlane. 1993. "Abortion Politics and Abortion Funding Policy." In *Understanding the New Politics of Abortion*, ed. Malcolm L. Goggin. Newbury Park, CA: Sage.
- Miller, Warren E., Donald R. Kinder, Steven J. Rosenstone, and the National Election Studies. 1993. *American National Election Study: Pooled Senate Election Study, 1988, 1990, 1992*. Computer file. 3d release. Ann Arbor: University of Michigan, Center for Political Studies (producer), Inter-university Consortium for Political and Social Research (distributor).
- Miller, Warren E., and J. Merrill Shanks. 1996. *The New American Voter*. Cambridge, MA: Harvard University Press.
- Shanks, J. Merrill, and Warren E. Miller. 1991. "Partisanship, Policy and Performance: The Reagan Legacy in the 1988 Election." *British Journal of Political Science* 21:129–97.
- Westlye, Mark C. 1991. *Senate Elections and Campaign Intensity*. Baltimore: Johns Hopkins University Press.
- Wright, Gerald C., Jr., and Michael Berkman. 1986. "Candidates and Policy in United States Senate Elections." *American Political Science Review* 80:567–88.