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*Issue Voting Under Uncertainty: An Empirical Test**

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Enclow and Hinich (1981) proposed a simple model of issue voting for the case in which voters are uncertain about candidates' issue positions. This paper adds an equally simple model of survey responses for issue placement questions that makes it possible to estimate respondents' uncertainty indirectly from existing National Election Study (NES) data. An empirical test of Enclow and Hinich's model based on voting behavior in the 1980 presidential election indicates that voters dislike uncertainty, as suggested by the model. Indeed, uncertainty about candidates' issue positions appears to have been sufficiently pervasive and important to rival issue distances as a determinant of electoral choices.

Enclow and Hinich (1981), building on the earlier work of Shepsle (1972), extended the familiar spatial model of voting to the case in which candidates' positions on issues are represented not by points on a policy dimension but by probability distributions over a policy dimension. The straightforward substantive interpretation of this generalization is that it allows for the possibility that voters may be uncertain about the candidates' actual positions—perhaps because of the inevitable difficulty of making precise political judgments on the basis of limited information, or perhaps because candidates deliberately blur their positions on the issues. The appealing feature of Enclow and Hinich's model is that, under suitable simplifying assumptions, voters' uncertainty about issues appears in a very direct and elegant way as an additional factor determining their electoral choices.

The simplicity of Enelow and Hinich's model and its emphasis on uncertainty, an important and much-noted feature of the real political world, would make the model appear ripe for an empirical test. That no such test has been forthcoming is presumably due to a paucity of relevant data. For nearly twenty years, the NES surveys have been asking respondents where candidates stand on important issues of the day. But these questions have focused almost entirely on obtaining point estimates of candidate positions; there has been no comparable effort to measure the precision of these issue perceptions in the minds of the respondents. In the absence of questions designed explicitly to measure the uncertainty of

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respondents' perceptions, we are left with the problem of inferring that uncertainty from the existing data.¹

The contribution of the present work is to supplement Enelow and Hinich's model of electoral choice with an equally simple model of the survey response that makes it possible to estimate respondents' issue uncertainty from existing NES data. In tandem, the model of electoral choice and the model of the survey response allow us to estimate not only respondents' uncertainty about where candidates stand on the issues, but also the impact of that uncertainty on respondents' voting behavior. Thus, it is possible to describe the extent of issue uncertainty in the electorate, to gauge the impact of uncertainty on election outcomes, and to provide an empirical test of Enelow and Hinich's model.

1. A Model of Electoral Choice Under Uncertainty

In this section I describe a model of electoral choice under uncertainty based on the Enelow-Hinich model. Like Enelow and Hinich, I assume that voters perceive candidates' positions on issues with some degree of uncertainty. Unlike Enelow and Hinich, I focus on the possibility that perceived candidate positions may vary from voter to voter, both with respect to location and with respect to uncertainty. In order to reflect these variations, we can define a set of random variables P_{ijk} , each with mean M_{ijk} and variance V_{ijk} , each representing voter *i*'s perception of candidate *j*'s position on issue *k*. The subscripts reflect the fact that both the mean M_{ijk} and the variance V_{ijk} of the distributions representing candidates' positions are allowed to vary across voters as well as across candidates and issues.²

I also assume, with Enelow and Hinich, that voter *i*'s overall evaluation of candidate *j*'s utility depends in part upon the squared distance between candidate *j*'s position as perceived by voter *i*, P_{ijk} , and voter *i*'s own preferred position, X_{ik} , on a series of issues:

$$U_{ij} = \sum_{k} \left[-(P_{ijk} - X_{ik})^2 \right] + C_{ij}$$
(1)

¹Zechman (1978) previously attempted to wrestle with this problem.

² It is important to note that the variance V_{yk} represents the *uncertainty in the mind of voter i* about candidate *j*'s position. There is no necessary connection between this *internal* variance and the variance across voters of perceived positions of candidates used by Campbell (1983) to operationalize candidate ambiguity. It is perfectly possible to imagine a world in which each voter has a very imprecise idea about where a candidate stands, but in which all voters' perceptions have the same mathematical expectation. It is equally possible to imagine a world in which these perceptions vary considerably from voter to voter. In Campbell's (perhaps unfortunate) usage, the second world reflects voter *uncertainty* but the first does not. In the usage proposed here, the first world reflects voter *uncertainty* but the second does not.

where C_{ij} is a voter- and candidate-specific term representing all the considerations involved in voter *i*'s overall evaluation of candidate *j* other than those pertaining to the issues explicitly included in the model.³

Because the candidate's issue positions P_{ijk} are perceived by the voter as probability distributions rather than as single points, the utility U_{ij} is also a probability distribution. The corresponding *expected* utility⁴ is

$$EU_{ij} = E\{\sum_{k} [-(P_{ijk} - X_{ik})^{2}] + C_{ij}\}$$

$$= E\{\sum_{k} [-P_{ijk}^{2} + 2P_{ijk}X_{ik} - X_{ik}^{2}] + C_{ij}\}$$

$$= \sum_{k} [E\{-P_{ijk}^{2}\} + 2X_{ik}E\{P_{ijk}\} - X_{ik}^{2}] + C_{ij}$$

$$= \sum_{k} [-(M_{ijk}^{2} + V_{ijk}) + 2X_{ik}(M_{ijk}) - X_{ik}^{2}] + C_{ij}$$

$$= \sum_{k} [-(M_{ijk}^{2} - 2X_{ik}M_{ijk} + X_{ik}^{2}) - V_{ijk}] + C_{ij}$$

$$= \sum_{k} [-(M_{ijk} - X_{ik})^{2} - V_{ijk}] + C_{ij}.$$
(2)

It is clear from equation 3 that the expected utility depends not only on the (squared) distances between the expected positions of the candidate and the voter's own positions, but also on the variances of the voter's perceptions. The implication of the model is that voters tend to dislike candidates about whose positions they are uncertain. This result is not surprising; it reflects the assumption of risk aversion built into the use of squared issue distances in the Enelow-Hinich formulation. What is interesting is that this dislike is manifested in a strikingly simple form. The variance of each voter's perception is simply added to the squared distance between the mean of that perception and the voter's overall evaluation of the candidate.

³The original version of the Enelow-Hinich model (1981) addressed the simplest case in which voters have quadratic utility functions over a single issue. A later version (Enelow and Hinich, 1984, sec. 7.4) extended the model slightly to include the case in which voters have separable quadratic utility functions over two (or more) issues. The more recent version of the model is the one considered here. Additional generalizations to allow for nonseparable and nonquadratic utility functions would obviously be desirable, but would further complicate the empirical analysis.

⁴Throughout this paper I assume that voters are expected utility maximizers. For an interesting discussion of some alternative possibilities, see Weisberg and Fiorina (1980).

Having derived this result, Enelow and Hinich went on to consider how uncertainty might vary systematically with candidates' locations on an ideological dimension. My own interest is not in such theoretical applications of the model, but rather in its empirical implications. Empirical analyses of "issue voting" (Markus and Converse, 1979; Page and Jones, 1979; and many others) typically include terms representing the distance (absolute, squared, or whatever) between candidate positions and voters' preferred positions. However, none has included the second term in the expected utility expression—the term representing the variance of the voters' perceptions of the candidates' positions. Thus, we simply do not know whether or not actual voting behavior is consistent with Enelow and Hinich's model.

In order to focus on individual voting behavior it is necessary to add to the model an explicit connection between the expected utilities in equation 3 and voters' choices. I assume that voters vote for the candidate whose associated expected utility is greatest. However, in order to introduce a realistic element of randomness into this choice, I assume that each voter *i* perceives the difference in expected utilities with some stochastic error, δ_i . In that case the *probability* that voter *i* will vote for candidate 1 over candidate 2 is

$$\operatorname{Prob}\left\{EU_{i1} - EU_{i2} + \delta_i > 0\right\}$$
(4)

$$= \operatorname{Prob} \left\{ \sum_{k} \left[-(M_{i1k} - X_{ik})^{2} - V_{i1k} \right] + C_{i1} - \sum_{k} \left[-(M_{i2k} - X_{ik})^{2} - V_{i2k} \right] - C_{i2} + \delta_{i} > 0 \right\}$$

$$= \operatorname{Prob} \left\{ -\delta_{i} < \sum_{k} \left[-(M_{i1k} - X_{ik})^{2} - V_{i1k} \right] + C_{i1} - \sum_{k} \left[-(M_{i2k} - X_{ik})^{2} - V_{i2k} \right] - C_{i2} \right\}.$$
(5)

If we assume that the δ_i error terms have independent normal distributions with mean zero and identical variance for each respondent, equation 5 implies that the probability of voting for candidate 1 over candidate 2 is related to squared issue distances, the variances of issue perceptions, and the nonissue components of candidate evaluation by a probit function.⁵ The only difficulty is that the variances of issue perceptions are not directly observable; in order to include these variances in an analysis of voting behavior, we must somehow estimate them indirectly from the available data.

⁵ For a concise treatment of the connection between random utility models of individual choice on one hand and specific statistical specifications on the other, see Aldrich and Nelson (1984, pp. 34–37).

2. A Model of the Survey Response for Issue Placement Questions

In this section I describe a model specifying how voters faced with the uncertainty described in section 1 might respond to survey questions soliciting information about candidates' positions on issues. My basic assumption is that respondents place a candidate on an issue if they are sufficiently certain of the candidate's position on that issue, but they refuse to place the candidate if their uncertainty exceeds some threshold value. In particular, I assume that respondent i places candidate j on issue k if and only if:

$$V_{ijk} \le T \tag{6}$$

where T is an uncertainty threshold constant across respondents, candidates, and issues.

Neither the variance of the perceived candidate position, V_{ijk} , nor the response threshold, T, are directly observable. However, I assume that uncertainty is systematically related to observable characteristics of the response setting, such as the prominence of the candidate, the demographic characteristics and political involvement of the respondent, and so on. Thus, we might stipulate that:

$$V_{ijk} = \beta_{0jk} + \sum_{c} \left[\beta_{cjk} (\text{Characteristic}_{ci}) \right] + \varepsilon_{ijk}$$
(7)

where c indexes a set of respondent characteristics, the ε_{ijk} terms are independent, normally distributed random variables with mean zero and identical variance for each respondent, and β_{0jk} and the β_{cjk} terms are parameters constant across respondents, though not necessarily across candidates or issues.⁶ Under these assumptions, the probability that respondent *i* will *refuse* to place candidate *j* on issue *k* is

Prob {
$$V_{ijk} > T$$
}
= Prob { $\beta_{0jk} + \sum_{c} [\beta_{cjk}(\text{Characteristic}_{ci})] + \varepsilon_{ijk} > T$ }
= Prob { $-\varepsilon_{ijk} < -T + \beta_{0jk} + \sum_{c} [\beta_{cjk}(\text{Characteristic}_{ci})]$ } (8)

Given the assumptions about the distributions of the ε_{ijk} terms, equation 8 is a straightforward probit model relating the probability of an observable outcome (respondent *i* refusing to place candidate *j* on issue *k*) to a series of

⁶ Variations in uncertainty due to characteristics and behavior of the candidates will appear as differences in these parameter values from one candidate to another. Such differences play only a minor role in my analysis, but they suggest interesting possibilities for investigating strategic candidate ambiguity of the sort examined by Shepsle (1972) and Page (1976).

observable respondent characteristics. The estimable parameters of the relationship (up to an arbitrary positive scale factor) are the β_{cjk} terms and the intercept ($-T + \beta_{0jk}$). Although we cannot estimate the response threshold *T* itself, we *can* estimate the relative impact of the various respondent characteristics on issue uncertainty. Moreover, we can use the empirical relationship corresponding to equation 8 to construct estimates of uncertainty for individual respondents (again, up to an arbitrary positive scale factor). These estimates of uncertainty can then be used to examine the impact of issue uncertainty on electoral choices.

3. Issue Uncertainty in the 1980 Presidential Election

In order to test the effect of issue uncertainty on actual voting behavior, I applied the models of electoral choice and the survey response described previously to data from the 1980 National Election Study conducted by the University of Michigan's Center for Political Studies. The 1980 study included placements for respondents and presidential candidates on a series of eight issues: abortion, aid to minorities, defense spending, guaranteed jobs, relations with Russia, government spending and services, tax cuts, and an abstract liberal-conservative ideological scale.⁷ The study also included data on a variety of other personal and political characteristics, including presidential vote choice. Excluding nonvoters and those who reported voting for minor candidates, I retained a sample for this analysis of 1,064 respondents who voted for Ronald Reagan or Jimmy Carter in the 1980 presidential election.⁸

In order to estimate the parameters of the models in sections 1 and 2, I adopted a two-step procedure. In the first step, I used data on respondents' demographic and political characteristics and placement or non-placement of Carter and Reagan on the issue scales to estimate the parameters of the model of survey response outlined in section 2.⁹ This

⁷ Positions on aid to minorities, defense spending, guaranteed jobs, relations with Russia, government spending and services, and abstract ideology were measured using the traditional seven-point issue scales without interior labeling. Positions on abortion and cutting taxes were originally measured on four- and five-point scales respectively, both with interior labeling. All distances on these two issues have been rescaled for comparability with the traditional seven-point format.

⁸ The total sample of 1,064 voters is based on two separate subsamples in the 1980 study. After the election, 1,408 interviews were completed in the traditional preelection and postelection study; 677 (48.1 percent) of these respondents were verified voters who reported voting for Carter or Reagan. 764 additional postelection interviews were completed with respondents in a separate year-long panel study; 387 (50.7 percent) of these panel respondents were verified voters who reported voting for Carter or Reagan. For further details of the study design and procedures, see Miller (1982).

⁹My measure of political interest is a scale constructed from survey responses concerning voters' interest in the campaign and how much they cared about the outcome of the step makes it possible to compute predicted probabilities of nonplacement for each respondent for each candidate on each issue. Under the assumptions of the model, these estimated probabilities correspond (up to an unknown positive scale factor) to the variances of the perceived candidate positions.

In the second step of my procedure I used the estimated probabilities of nonresponse from the first step together with data on issue distances, party identification, perceived leadership, and economic management abilities, and vote choice to estimate the parameters of the model of electoral choice outlined in section $1.^{10}$

The specific distributional assumptions in sections 1 and 2 imply that each of these two steps should involve a probit model. Unfortunately, two-stage probit procedures are unwieldy—particularly in this instance, where the second stage requires estimation of the unknown scale factor from the first step together with the separate issue effects. In order to simplify the estimation procedure and the presentation of results, I have replaced the probit model in each stage with a linear probability model. The resulting parameter estimates are interpretable in much the same way as ordinary regression coefficients.¹¹

Table 1 summarizes the first-stage parameter estimates for the model of survey nonresponse. Not surprisingly, they indicate that education, media exposure, and political interest all tended to make respondents less likely to exceed the uncertainty threshold (and thus *more* likely to place the candidates on the issues). In addition, young people, whites, and males were less likely on average to exceed the uncertainty threshold than were older people, nonwhites, and females.¹² Finally, psychological involvement of two

election. My measure of media exposure is a scale constructed from survey responses concerning exposure to political discussion, network television news, news magazines, newspapers, and radio news. Both of these scales are constructed so that a maximum score on each component earns an overall scale score of 1.0 and a minimum score on each component earns an overall scale score of 0. Education and age are measured in years, race, and sex by dummy variables for nonwhites and females, and extremity by the distance between the midpoint (4) and the respondent's own position on the relevant seven-point scale.

¹⁰ Party identification and perceived leadership and economic management abilities are included in the analysis in order to capture important components of the nonissue C_{ij} terms.

¹¹ For a general discussion of the trade-offs involved in using the linear probability model to approximate probit or logit, see Achen (forthcoming). As in the simpler single-equation case, the efficiency of parameter estimates from two-stage linear probability models can be improved (and the standard errors corrected) by weighting and reestimating. Achen provides a description of this "generalized two-stage least squares" procedure. All of the parameter estimates and standard errors reported here are generalized two-stage least squares estimates.

¹² Not surprisingly, these group differences varied by issue. Nonwhites were *less* uncertain than whites about aid to minorities and government jobs, while females were *less* uncertain than males about abortion. Table 1 conceals these variations, since it lists averages across all eight issues.

	Carter	Reagan
Education (in years)	0160	0211
	(.0040) ^b	(.0045)
Media exposure (0-1)	205	228
	(.051)	(.058)
Political interest (0-1)	052	076
	(.043)	(.048)
Age (in years)	.00170	.00248
	(.00062)	(.00070)
Race (nonwhite)	.056	.055
	(.034)	(.038)
Sex (female)	.042	.059
	(.019)	(.022)
Issue extremity (0–3)	115	106
	(.009)	(.010)
Strong Democrat	064	054
	(.045)	(.051)
Weak Democrat	063	079
	(.043)	(.048)
Independent Democrat	089	118
	(.048)	(.055)
Independent Republican	079	088
	(.046)	(.052)
Weak Republican	067	096
-	(.044)	(.050)
Strong Republican	058	127
	(.046)	(.052)
Intercept	.719	.825
	(.072)	(.080)
Standard error of estimate	.368	.395
R-squared	.26	.25

TABLE 1

Parameter Estimates for Model of Survey Nonresponse^a

^aLinear probability model; averages based on eight issues for each candidate; N = 1064 each.

^bAverage standard error.

distinct sorts made respondents less likely to exceed the uncertainty threshold: party identifiers of all sorts were more likely to place both candidates than were "pure" Independents, and respondents with relatively extreme self-placements on each issue were more likely to place the candidates than were those with middle-of-the-road positions themselves.¹³ All of these effects were similar for both candidates, although somewhat more pronounced for Reagan than for Carter.

Although the general pattern of parameter estimates in Table 1 makes good substantive sense, it is clear from the goodness-of-fit statistics that the variables included in the table do not provide particularly accurate predictions of nonresponse. On average, they account for only a quarter of the total variance in nonresponse for the issues included in the model. For purposes of the present analysis the important consequence of this lack of fit in the first stage is that it reduces the precision of the parameter estimates in the second stage (the model of electoral choice). Conversely—to take the optimistic point of view—it may be possible in subsequent analyses to improve the precision of the second-stage parameter estimates by specifying more completely the first-stage model of survey nonresponse.

Despite the relative imprecision of the estimated issue uncertainties, the second-stage parameter estimates, shown in Table 2, do provide evidence that uncertainty is related to choice in the way suggested by the Enelow-Hinich model. The basic result of the model is that, for each issue, voters add the variance of their perceptions of the candidates to the squared distance between the expected positions of the candidates and their own position in weighing the total impact of the issue on a candidate's expected utility. Since the estimated probabilities of nonresponse from the first stage of the analysis are supposed to reflect variances of candidate perceptions up to an (unknown) positive scale factor, these estimated probabilities, appropriately scaled, should simply be added to the observed squared issue distances in the second-stage analysis of electoral choice. Thus, for each voter, candidate, and issue, the cost factor becomes:

$$-\lambda_{jk}[(M_{ijk}-X_{ik})^2+\zeta(N_{ijk})] \tag{9}$$

where X_{ik} and M_{ijk} are the voter's own position on issue k and the position she or he assigns to candidate j, respectively; N_{ijk} is the estimated probability of nonresponse from the first stage of the analysis, λ_{jk} is a candidate- and issue-specific weight, and ζ is the unknown scale factor. By including the

¹³This last result is somewhat exaggerated by the fact that respondents who refused to place themselves on an issue (recoded by me to the midpoint of the seven-point scale) were not *asked* to place the candidates. However, in other surveys where respondents who did not place themselves *were* invited to place the candidates, most refused to do so. See Powell (1985, p. 5).

	Parameter Estimate	Standard Error
Party identification		
Strong Democrat	.328	.045
Weak Democrat	.452	.041
Independent Democrat	.445	.045
Pure Independent	.720	.046
Independent Republican	.744	.042
Weak Republican	.796	.040
Strong Republican	.737	.041
Leadership $(0-1)$		
Carter	267	.039
Reagan	.159	.036
Economic management (0–1)		
Carter	116	.042
Reagan	.213	.040
Squared issue distances: λ_{ik} s (0-36)		
Carter		
Abortion	.00192	.00093
Aid to minorities	.00164	.00097
Defense spending	00169	.00102
Guaranteed jobs	.00164	.00103
Ideology (Lib. Con.)	.00140	.00147
Relations with Russia	.00093	.00087
Spending/Services	00002	.00103
Tax cut	00079	.00099
Reagan		
Abortion	00075	.00079
Aid to minorities	00200	.00142
Defense spending	00300	.00140
Guaranteed jobs	00010	.00134
Ideology (Lib. Con.)	00239	.00148
Relations with Russia	00248	.00132
Spending/Services	00172	.00134
Tax cut	00126	.00131
Uncertainty scale factor (ζ)	11.43	4.78
Standard error of estimate	.314	
R-squared	.60	
Correctly classified	87.3%	
N	1064	

TABLE 2Parameter Estimates for Model of Electoral Choice^a

^aReagan vote = 1; Carter vote = 0; second-stage estimates from two-stage linear probability model.

scale factor ζ as a free parameter of the model, we can not only estimate the weight voters attached to uncertainty relative to issue distances; given Enelow and Hinich's formulation, we can also interpret the weighted uncertainties $\zeta(N_{ijk})$ as estimated variances of issue perceptions on the original seven-point scales.

This reasoning suggests three empirical tests of the model. First, the estimated scale factor should be positive. If it is not, either the variances of voters' perceptions of candidates' issue positions are negative (an obviously unsatisfactory result) or else voters are *rewarding* candidates for uncertainty (not illogical, but contrary to the assumption of risk aversion built into the Enelow-Hinich model). Secondly, and somewhat more specifically, the estimated scale factor should produce plausible variances of perceptions of candidates' positions on the underlying seven-point issue scales—not only positive, but neither too small nor too large to be credible. And third, given an appropriate scale factor, the combined squared-distance-plus-variance measure for each issue should have a plausible effect on electoral choices. In all of these respects the results in Table 2 accord well with theoretical and intuitive expectations.

To take the last point first, the estimates for the combined effects of issue distance and uncertainty (shown under the heading of "Squared Issue Distances" in Table 2) suggest that evaluations of Reagan and Carter on the issues included in the model did influence voters' electoral choices in a generally plausible way. Of the sixteen candidate-issue pairs, only three produced parameter estimates with the "wrong" signs, and only one of these was larger than its standard error. The average effect for all sixteen issue-candidate pairs, including those having the wrong signs, was .00117. This result suggests that a change of one percentage point in a voter's probability of choosing Reagan over Carter would result from a nine-unit change in either squared distance or variance for either candidate on a single issue. Roughly, such a change could be caused by an increase of between one and three points on the seven-point scale in *either* the expected distance *or* the standard deviation of perceived candidate position for a single candidate on a single issue.

The uncertainty scale factor itself is pretty clearly positive. This result provides some support for the assumption of risk aversion in the Enelow-Hinich model, and some embarrassment for the argument of Shepsle (1972) that candidates may be vague on the issues because voters are risk acceptant.¹⁴ As for the magnitude of the scale factor, the clearest way to

¹⁴ This is not to say that vagueness is necessarily a losing strategy. My own guess is that its utility depends crucially on *differential* perceptions among different audiences, rather than on *uncertain* perceptions in a single homogeneous audience.

evaluate its credibility is to use it to reconstruct the unobserved variances of perceived candidate positions from the probabilities of nonresponse computed from the first-stage parameter estimates. Obviously, these variances vary with the extent of uncertainty across issues, candidates, and individual voters. The overall distribution of standard deviations of perceived candidate positions on the underlying seven-point scale, calculated from the estimated scale factor in Table 2, is shown in Figure 1. The distribution indicates that the average voter perceived the average candidate's position as a probability distribution with a standard deviation of about 1.75 scale points (or a variance of about three scale points). Standard deviations of less than .75 scale points or more than 2.75 scale points were rare, though not exceptionally so. (For illustrative purposes, hypothetical perceptions of issues with these standard deviations are shown in Figure 2.) Given the lack of previous empirical studies of issue uncertainty, it is impossible to evaluate these results except in terms of their inherent credibility. They imply somewhat more uncertainty than I had expected,





Standard deviation of P_{ijk} for 1064 respondents, two candidates, and eight issues.

FIGURE 2

Hypothetical Issue Perceptions of Varying Uncertainty



but not enough to make me reject the basic model; readers may, of course, have other views.¹⁵

If we accept (at least provisionally) the absolute magnitudes of issue uncertainty indicated by the distribution in Figure 1, we can go on to examine variations in the aggregate level of uncertainty across candidates

¹⁵ The uncertainty scale factor may actually be overestimated somewhat due to a problem of missing data. The question arises of how to assign issue distances for issues on which a voter refused to place a candidate. My approach is simply to assume that the voter perceived the candidate's expected position as being at the midpoint of the seven-point scale. This approach, while it seems generally reasonable, could lead to systematic underestimation of issue distances for precisely those voters with the greatest levels of uncertainty—and thus to an upward bias in the estimated effect of uncertainty on vote choices. Unfortunately, there appears to be no simple way to judge the magnitude of this potential bias. and issues.¹⁶ These sources of variation are illustrated in Table 3, which shows the average standard deviation of P_{ijk} for each candidate for each issue. This pattern of results seems reassuring in at least two respects.

First, if we compare uncertainty across issues, respondents appear to have been most uncertain about the candidates' stands on abortion, cutting taxes, and the abstract ideological scale. The first of these results is probably due to the obvious reluctance of both candidates to become embroiled in the abortion issue, the second to the newness of Reagan's tax cutting plan as a campaign issue, and the third to the well-documented difficulty many respondents have in using abstract ideological labels.¹⁷

The second reassuring point about the results in Table 3 is that uncertainty varies between candidates in just the way we might predict from the simple fact that Carter was an incumbent and Reagan a challenger. On every issue except the Reagan tax cut, the average uncertainty of perceptions of Carter was less than the corresponding uncertainty of perceptions of Reagan. Indeed, for five of these issues—aid to minorities, defense spending, guaranteed jobs, and government spending and services—the difference in average standard deviations was between 10 and 20 percent. These issues are precisely the ones on which Carter, as an incumbent president, had developed a four-year record of concrete action. The three issues on which Carter's positions were not significantly clearer to the voters were the two on which he took no action as president—abortion and the Reagan tax cut—and the one for which his position could least plausibly be inferred from his actions as president—the abstract ideological dimension.

4. The Political Significance of Issue Uncertainty

Having inferred what we can about the extent of issue uncertainty in the 1980 presidential electorate, and about variations in uncertainty across issues and candidates, it seems appropriate to return to the question of how

¹⁶ In principle, an individual voter could be quite certain about where the candidates stood on some issues of special personal importance, but quite uncertain about where they stood on other issues of lesser interest. This would be the case, for example, if the electorate consisted of a number of relatively distinct "issue publics" (Converse, 1964). One of the limitations of my analysis is that the procedure for estimating uncertainty on the basis of *aggregate* relationships with personal characteristics makes individual voters look artificially consistent across issues in their degree of uncertainty. Errors of this sort average out in the analyses reported here, except that they probably truncate somewhat the range of uncertainty shown in Figure 1. In an analysis focusing on the fine structure of uncertainty for individual voters, this problem would be more serious.

¹⁷ The results for abortion and cutting taxes may also reflect the fact that positions were measured somewhat differently for those issues than for the other issues in the study. See note 7 for a description of these differences.

TABLE 3

	Carter	Reagan
Abortion	2.12	2.20
Aid to minorities	1.35	1.70
Defense spending	1.23	1.45
Guaranteed jobs	1.49	1.68
Ideology (LibCon.)	1.85	1.86
Relations with Russia	1.28	1.60
Spending/Services	1.44	1.70
Tax cut	2.31	2.29

Mean Uncertainty of Placements by Candidate and Issue^a

^aAverage standard deviation of P_{ijk} .

uncertainty affects voting decisions. The results reported in Table 2 provide some evidence that uncertainty matters, but they provide no direct way to gauge the aggregate magnitude of the effect of uncertainty on voting behavior in the 1980 election. In particular, they provide little perspective concerning the relative importance of uncertainty among the larger set of factors that are presumed to influence the way people vote.

Perhaps the most telling comparison is between the effect of issue uncertainty on one hand and the effect of issue distances on the other. One advantage of such a comparison is that it is less sensitive than others to the precise specification of the model of voting behavior on which the results in Table 2 are based. That model is a highly simplified one, ignoring as it does a variety of important variables and relationships.¹⁸ Nevertheless, because issue distances and issue uncertainties enter the model together, their *relative* importance is largely unaffected by changes in the specific coefficient values for the various issues. (Of course, the relative weight of issue distances and issue uncertainty *is* still affected by the specific value of the uncertainty scale factor, which does vary with changes in the model specification. However, this variation is itself constrained to some degree by a priori limits on the range of plausible variances of voters' perceptions of candidates' issue stands.)

¹⁸ Most obviously, it is easy to make plausible arguments for the endogeneity of *all* the variables in the model, including issue perceptions (Conover and Feldman, 1984; Brady and Sniderman, 1985) and party identification (Jackson, 1975; Fiorina, 1981; and others). Unfortunately, it is less easy to develop and estimate the more general models implied by these arguments.

Another advantage of comparing the effects of issue distances and issue uncertainty is that meaningful baselines exist for assessing the political impact of both sets of variables. In the case of issue distances, we can tally the effect of all voter-candidate issue disagreements on all eight issues included in the analysis. In the case of issue uncertainty, we can tally the effect of voters' total uncertainty for each candidate for all eight issues. Obviously, no candidate can reasonably expect to match the issue position of every voter on every issue, or to completely eliminate uncertainty about where he or she stands; nevertheless, the total magnitude of deviations from these baselines seems to provide an appropriate measure of the impact of issue distances and issue uncertainty on voting behavior.

Applying these standards to the parameter estimates in Table 2, it is possible to calculate the average effects of issue distances and of issue uncertainty for each candidate, and thus the total and net effects of these two factors on voting behavior in the 1980 election. The results of these calculations are shown in Table 4.

It appears from table 4 that Carter's inability to please every voter on every issue cost him a total of less than three percent of the vote, while the corresponding cost for Reagan was about five percent. At the same time, the uncertainty of voters' perceptions of the candidates' issue stands cost Carter about 1.5 percent and Reagan about five percent of the total vote. Carter thus enjoyed a net advantage from both factors, of a little more than two percent for issue distances and a little more than three percent for issue uncertainty.¹⁹

TABLE 4

Uncertainty on Vote Choices ^a			
	Squared Issue	Issue	
	Distances	Uncertainty	
Carter	.027	.016	
Reagan	048	049	
Net	021	032	
Total	.074	.065	

Impact of Issue Distances and Uncertainty on Vote Choices^a

^aAverage change in probability of voting for Reagan associated with issue distances and uncertainty.

¹⁹While part of this advantage, particularly for uncertainty, arises from differences in placements on the original seven-point scales, most is because voters seem to have penalized Carter less than Reagan for similar levels of disagreement and uncertainty. This asymmetry is reflected in the issue cost coefficients in Table 2, which are considerably smaller on average for Carter than for Reagan.

The total (absolute) effects on vote choices were 7.4 percent for issue distances and 6.5 percent for issue uncertainty.

As always, judgments about the political significance of these effects depend largely on prior expectations and perspective. Decades of political theory and empirical research have been devoted to the notion that voters vote for candidates whose issue positions are closest to their own (Downs, 1957; Key, 1966; Jackson, 1975; and many others). While issue uncertainty has received little attention from political theorists and almost none from empirical researchers, it is striking that distances and uncertainty appear to have had such similar total and net effects on voting behavior. It is hard to avoid the conclusion offered by Weisberg and Fiorina (1980, p. 254): "Uncertainty pervades voting, but previous studies have not made sufficient allowance for its effects."

It is worth noting, too, that these results for the 1980 presidential election by no means provide an upper bound on the impact of issue uncertainty. For one thing, other presidential candidates might elicit more uncertainty among voters than Reagan and Carter did. But even more obviously, the prevalence of uncertainty must be still greater at lower electoral levels. Two examples are provided in Table 5. The first is from early 1980, at the beginning of the Republican primary season; the other is from the 1978 congressional campaign. In each case the total extent of uncertainty about the candidates' positions on the abstract ideology scale was greater than in the 1980 general election.²⁰

While the *extent* of uncertainty at each of these electoral levels is itself of interest, the political impact of uncertainty depends more directly upon *disparities among candidates* in levels of voter uncertainty. Here the comparisons across electoral levels are even more striking. Carter and Reagan were equally likely to be placed on the abstract ideology dimension in the 1980 fall campaign (though, as noted above, there were perceptible differences in levels of uncertainty for some other issues). But at the beginning of the 1980 primary season, (Republican) survey respondents were almost *twice* as likely to be able to place Reagan on the ideology scale as they were some of his major opponents (Howard Baker, George Bush).²¹ And in the 1978 congressional campaign, incumbent congressmen were half again as

²⁰ For purposes of comparison, all of the percentages in Table 5 are based on both voters and nonvoters. Figures for the 1980 general election are taken from the traditional preelection portion of the National Election Study survey. Figures for the 1980 Republican primary season are taken from the first wave of the 1980 National Election Study panel survey, and include Strong Republicans, Weak Republicans, Independent Republicans, and Pure Independents only. Figures for the 1978 congressional elections are calculated from Powell (1985, Tables 5, 8, and 9).

²¹ This is to say nothing of minor candidates (Robert Dole, Phil Crane, John Anderson) for whom issue positions were not even solicited in the National Election Study survey.

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TABLE 5

Issue Uncertainty at Various Electoral Levels^a

Survey	Percentage
1980 Presidential election	
Jimmy Carter	43
Ronald Reagan	43
1980 Republican primaries	
(Jan-Feb, Republicans only)	
Ronald Reagan	46
Gerald Ford	50
John Connally	61
Howard Baker	71
George Bush	72
1978 Congressional elections	
Incumbents	53
Challengers:	
Competitive districts	68
Noncompetitive districts	85

^aPercentage of sample unable to place candidates on an abstract ideological scale.

likely to be placed on the scale as competitive challengers, and *three times* as likely to be placed on the scale as challengers in noncompetitive districts.²² If the model of electoral behavior I have set out is essentially correct, disparities of this magnitude may account for a significant fraction of the electoral advantage enjoyed by incumbents in congressional elections.

Given the current state of knowledge about the extent and effects of electoral uncertainty, such hypotheses must remain little more than guesses. The analysis presented here is sufficiently indirect that any attempt to derive general conclusions about the political significance of issue uncertainty would be foolhardy. Nevertheless, the evidence offered here *does* seem to me to warrant a somewhat less grand conclusion: that issue uncertainty is important enough to deserve more direct and sustained attention than it has so far received from analysts of voting behavior.

The clearest need is for satisfactory measures of uncertainty, not only

²² Powell (1985) classified about 55 percent of the districts in the 1978 sample as competitive and the remaining 45 percent as noncompetitive. for perceptions of where candidates stand on issues, but also for other sorts of political perceptions. Such measures should not be jerry-built from items designed for other purposes, but developed specifically to investigate the role of uncertainty in candidate evaluation. There will be difficulties. It may not be sufficient to simply ask respondents how uncertain they are about their political perceptions; and the ever-present effects of measurement error will complicate any attempt to infer uncertainty indirectly from reported perceptions themselves. Nevertheless, we can surely move beyond the current sorry state of progress. Only then is uncertainty likely to receive its due emphasis in our analyses of electoral choice.

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