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Political Ignorance and Collective Policy Preferences

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In contrast with the expectations of many analysts, I find that raw policy-specific facts, such as the direction of change in the crime rate or the amount of the federal budget devoted to foreign aid, have a significant influence on the public's political judgments. Using both traditional survey methods and survey-based randomized experiments, I show that ignorance of policy-specific information leads many Americans to hold political views different from those they would hold otherwise. I also show that the effect of policy-specific information is not adequately captured by the measures of general political knowledge used in previous research. Finally, I show that the effect of policy-specific ignorance is greatest for Americans with the highest levels of political knowledge. Rather than serve to dilute the influence of new information, general knowledge (and the cognitive capacities it reflects) appears to facilitate the incorporation of new policy-specific information into political judgments.

The American public's ignorance of political matters is well documented, but the consequences for democracy are far less clear. For some, a disengaged and ill-informed citizenry signifies a failure of democracy. But for others, the practical question is whether political judgments would be any different if citizens were better informed. If a "rationally ignorant" public can nevertheless manage to approximate the "enlightened preferences" that a fully educated and engaged citizenry would hold, then perhaps democratic government and political ignorance can coexist.

A growing body of research assesses the extent to which Americans' political judgments would differ if the public were well informed about politics. The most straightforward way to address this issue is to inform a representative group of citizens about some set of political matters and see whether their judgments change as a result. This is the approach taken by James Fishkin and his colleagues in a series of "deliberative polls" that bring together a large number of randomly selected individuals and provide them with a wealth of information about specific political issues (Fishkin 1997; Luskin and Fishkin 1998). This strategy has many advantages but is limited by its great expense and by the unusual circumstances in which information is acquired. In addition, deliberative polls are explicitly designed to assess the effects of both information and deliberation on citizens' policy preferences. We cannot judge how much of the change revealed by a deliberative poll should be attributed to new information of the sort that might be acquired through the media and how much is due to the process of collective deliberation.

A second approach uses statistical models rather than experimental interventions to compare the political preferences of more and less informed Americans.

Bartels (1996), Delli Carpini and Keeter (1996), and Althaus (1998) all use this method to impute hypothetical "fully informed" preferences to less informed respondents while taking into account a range of demographic controls. This technique adjusts each respondent's political preferences to match the predicted preferences of a respondent who shares the same set of demographic characteristics but possesses the highest level of political information.¹ The importance of political ignorance is revealed by comparing the sample's observed preferences with the imputed preferences if all respondents were "fully informed."

This article draws primarily on the latter approach to the study of political ignorance and expands upon it in three ways. First, I note that most of the political facts in typical information scales are unlikely to contribute directly to such judgments as vote choice or policy preferences. Although knowing which office Ted Kennedy holds or how many justices sit on the Supreme Court does distinguish the politically knowledgeable from those who are less informed, and respondents who score high in such knowledge do express political preferences different from those of otherwise similar respondents who score low, this knowledge per se is unlikely to influence political choices or preferences. Instead, as Zaller (1992) suggests, measures of general political knowledge capture an amalgam of information, interest, engagement, and cognitive capacity for understanding the political world. It is some unknown combination of these elements that leads "fully informed" respondents to express political preferences different from those of their less informed peers. (Following the convention of previous research in this paradigm, I will use "fully informed" to refer to the highest level of general political information, as reflected by the relevant survey measure of general information.)

Although the "opacity" of general information mea-

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¹ The "highest level of political information" can reflect either an existing category of respondents or a hypothetical respondent at the extreme end of the underlying information distribution. Delli Carpini and Keeter (1996) and Althaus (1998) take the former approach. Bartels (1996) takes the latter, using a score of 1.0 to represent the highest level of political information based on a five-point measure on which actual scores range from .05 to .95.

tures has been recognized by researchers, these measures are usually thought to be related to specific political judgments because those who score high are more likely to possess the specific information that may contribute directly to particular political judgments (Althaus 1998, 547; Delli Carpini and Keeter 1996, 223; see also Downs 1957, 79–80). But as Kuklinski and others (1998) point out, even Americans who are politically well informed in general (including those identified as fully informed by the criteria of previous research) may well be ignorant of highly relevant policy-specific knowledge. For example, in 1998, only 28% of Americans with the highest level of general political knowledge knew that the crime rate was falling, despite seven consecutive years of declines (see analyses below). I will assess the effect of “policy-specific ignorance” on the policy preferences of those who are deemed fully informed by the criteria of prior research. In other words, I ask what effect policy-specific ignorance has on the political preferences of fully informed respondents.

The second way in which I expand on the literature is to supplement the calculation of imputed preferences with the experimental manipulation of political information. Combining elements of the two different approaches outlined above, I compare the policy preferences expressed by respondents who were randomly chosen to receive specific political information to the preferences of a control group. The experimental design affirms that the estimated effects of political information on policy preferences are causal and not spurious.

Finally, I ask how the effect of policy-specific information differs for respondents with different levels of general political knowledge. Two alternatives have been suggested. On the one hand, general political knowledge (and its correlates, such as political interest and cognitive sophistication) may enhance individuals’ ability and motivation to respond to new policy-specific information (Delli Carpini and Keeter 1996). On the other hand, general political knowledge may provide a resource to resist the influence of new policy-specific information (Zaller 1992). And if both forces are at work we may find either a curvilinear relationship between general political knowledge and the effect of policy-specific information or no apparent relationship at all.

My analyses lead to three conclusions. First, studies of political information based on general knowledge scales offer a useful but incomplete account of the effect of political ignorance. The limits of this approach arise from the fact that many people who are fully informed in terms of general political knowledge are nonetheless ignorant of policy-specific information that would alter their political judgments. Second, policy-specific ignorance may well have a greater influence on political preferences than the lack of general knowledge as measured by political information scales. In five of the seven situations I examine, that is the case. Of necessity, I looked only at a limited number of examples, and two were chosen precisely because substantial policy-specific information effects were ex-

pected. Nevertheless, the results suggest that much of what separates actual political preferences from hypothetical “enlightened preferences” is due to ignorance of specific policy-relevant facts, not a lack of general political knowledge or the cognitive skills or orientations that measures of general political information reflect.

Third, policy-specific information has a stronger influence on respondents who display higher levels of general political knowledge. Rather than dilute the effect of new information, general knowledge (and the cognitive capacities it reflects) appears to facilitate its incorporation into political judgments.

DATA AND MEASURES

My analyses require three kinds of data from the same survey: a measure of general political knowledge, a measure of policy-specific information, and a measure of policy preference plausibly related to the specific information. (By “plausibly related” I mean only that the specific information may affect a respondent’s policy preference, not that it should have an effect. I treat as an empirical question whether any policy-specific information *X* is related to political judgment *Y*, and I leave aside the normative question of whether judgment *Y* should be influenced by *X*.)

Policy-Specific Information

Survey questions that assess the level of general political information are relatively uncommon, and items that assess policy-specific information are rare indeed. I make use of two surveys, one of which happens to have the necessary elements and one of which I designed for this purpose. The first is the 1988 American National Election Study (NES), which includes a number of items about perceptions of change during the Reagan administration. I focus on three items: (1) whether “federal efforts to improve and protect the environment increased, decreased, or stayed about the same as they were in 1980”; (2) whether “compared to 1980, the federal budget deficit has gotten smaller, stayed about the same, or gotten larger”; and (3) whether “compared to 1980, the level of unemployment in the country has gotten better, stayed about the same, or gotten worse.”

Responses to these questions, like the items used in general measures of political information, can be clearly classified as correct or incorrect. Federal efforts to improve the environment unquestionably declined between 1980 and 1988, whether assessed in terms of dollars spent, legislative changes, or environmental policy enforcement (e.g., Kraft 1990; Vig 1990). The federal deficit increased dramatically in both real and nominal terms over this same period (U.S. Bureau of the Census 1997). Unemployment declined from 7.5% in fall 1980 to 5.4% in fall 1988 (Bureau of Labor Statistics 1999).

To supplement the measures of policy-specific information available in existing surveys, I wrote two sets of questions for the 1998 Multi-Investigator Survey

(MIS), conducted by the Survey Research Center at the University of California at Berkeley. The MIS was a national random-digit telephone survey of English-speaking adults in the 48 contiguous states, supported by the National Science Foundation (SBR-9818742), and directed by Paul M. Sniderman and Henry Brady. It combined thirteen different projects designed by 20 social scientists from around the country. The 1,067 completed interviews were conducted between June 1998 and March 1999, and the response rate was 55.8%. In my analyses, these data are merged with another 105 cases from a national pilot sample.² The MIS data are weighted to take into account the number of eligible respondents and the number of voice telephone lines per household and to match the population joint distributions of age, sex, race, and education.

The two policy-specific information items from the 1998 MIS relate to crime and foreign aid. The first asks: "Would you say there is more, less, or about the same amount of crime in the United States today as compared to 10 years ago?" The second reads: "Please give your best guess for this next question. For every dollar spent by the federal government in Washington, how much of each dollar do you think goes for foreign aid to help other countries?"

The correct answer to the crime question is fairly clear: FBI statistics show a decline of 18% in the overall crime rate between 1988 and 1998 (Federal Bureau of Investigation 1999). Respondents who answered that there is less crime than ten years ago are considered to be informed in this regard; those who responded that crime has increased, stayed about the same, or "don't know" are considered to lack this information.

More discretion is involved in defining a correct answer to the question about foreign aid. In 1998, foreign aid of all kinds amounted to eight-tenths of one percent of the federal budget (U.S. Bureau of the Census 1998, 339, 796). It would be unrealistic to expect respondents to know the exact percentage, so as a reasonable approximation, I considered responses that foreign aid accounts for 5% or less of the federal budget as "correct."³

Randomized Provision of Policy-Specific Information

My objective in designing randomized experiments for policy-specific information was to mimic the kind of information that a person might acquire in everyday life. Randomly chosen respondents were given information about crime or foreign aid in the guise of asking

whether they had heard about particular news stories. To make the treatment and control conditions as parallel as possible, both groups were asked about news stories on the topic in question, but only the treatment group was provided with the relevant information. The treatment version of these two questions read as follows.

Our first questions are about two stories that have been in the news lately. The first story is: the crime rate in America has gone down for the seventh year in a row and is now lower than at any time since 1974. Have you heard about this story?

The second story is about a new report that was just released about American foreign aid to help other countries. It said that the amount of money we spend for foreign aid has been going down and now makes up less than one cent of every dollar that the federal government spends. Have you heard about this story?

Respondents in the control group were asked the following questions.

Our first questions are about two stories that have been in the news lately. The first story is about the release of a new government report about the crime rate in America. Have you heard about this story?

The second story is about a new report that was just released about American foreign aid to help other countries. Have you heard about this story?

The crime and foreign aid stories were randomized independently, so that half of those who were provided with information about the crime rate were also given information about foreign aid and vice versa. All 1,172 MIS respondents received one of the two versions of the foreign aid question. The crime question, however, had three additional versions that were designed for other purposes and are excluded here. Consequently, fewer cases are available for analysis of attitudes toward crime than of attitudes toward foreign aid.

Policy Preference Measures

I associate a particular political judgment (or judgments) with each of the five policy-specific information items described above. I make no normative claim that these particular bits of information should influence respondents' policy preferences; I simply seek to determine whether they do so. Any particular social or political fact may have multiple consequences for a given individual's policy preferences. For example, knowing that crime has declined may influence one's views on a range of related policy matters, from prison construction, to court procedures, to police conduct. Whenever possible, I assess the influence of policy-specific information on more than one policy preference or political judgment.

I pair the measure of respondents' information about changes in the unemployment rate with preferences for federal government spending to help the unemployed and with respondents' attitudes toward "placing new limits on foreign imports in order to protect American jobs." My expectation is that knowledge of a decline in unemployment will, *ceteris paribus*,

² In terms of sample frame, interviewing procedures, and sample weights, the pilot is identical to the MIS survey. After the pilot cases were collected, changes were made to some of the MIS items. Because none of the items used in my analyses were involved, I was able to combine the two samples.

³ Sensitivity analyses showed that the particular cutoff for perceptions of foreign aid spending had little effect on the results. Similarly, combining respondents who answered that crime remained "about the same" as ten years ago with those who indicated it had fallen would not change the substantive conclusions of this research.

lessen the desire to increase spending for the unemployed and boost opposition to import limits. Similarly, I anticipate that knowledge of deficit growth will be associated with a greater willingness to pay higher taxes in order to shrink the deficit. I pair knowledge of a decline in federal efforts to protect the environment with a preference for increasing federal spending in that area and with the perception that George Bush, then vice president, was less concerned about the environment than Michael Dukakis, his opponent in the 1988 presidential election. The MIS crime item is paired with a measure of respondents' support for government spending on prison construction. Finally, perceptions of foreign aid spending are paired with support for federal spending for foreign aid.⁴ (The question wordings and response distributions for the MIS items are provided in the Appendix; see Miller [1989] for details of the NES questions.)

General Information Measures

To measure general political information from the NES, I use the 16-item additive index developed by Delli Carpini and Keeter (1993, 1996) and employed by Althaus (1998). Fifteen of the items are binary measures, scored 1 for a correct answer and 0 for an incorrect or no answer. These questions asked about the offices held by various political figures, the majority party in the House and Senate, the relative ideological positions of Bush and Dukakis, the relative ideological positions of the Republican and Democratic parties, and the relative positions of the two parties on a series of issues (see Althaus 1998 for details). The final item was a five-point interviewer rating of the respondents' general level of information about politics and public affairs. The raw scale scores ranged from 1 (lowest interviewer rating and no correct answers) to 20. To ease interpretation and compatibility with the general information scale from the MIS, I converted the raw scores into percentiles based on the proportion of respondents at each value of the scale.⁵

The general information measure from the MIS is a seven-item additive index that consists of such questions as which political party has the most members in the House of Representatives and how large a majority is needed to override a presidential veto (see the Appendix). Among these seven are the five items recommended by Delli Carpini and Keeter (1993, 1996). Like the NES scale, raw scores were converted to percentiles based on the proportion of respondents

with each scale score. Alpha reliability for the NES and MIS scales are .88 and .68, respectively.

Control Variables

My analysis of the NES uses the same set of 25 control variables described in Althaus (1988), which covers demographic characteristics and partisan identification. The MIS analysis examines the 17 of these variables available on that survey, coded as similarly as possible to the NES measures (see the Appendix for details).

GENERAL AND POLICY-SPECIFIC INFORMATION

Some scholars argue that Americans tend to be political specialists, knowledgeable about the few issues in which they have a particular concern (Bennett 1990; Iyengar 1990; Krosnick et al. 1993). If so, we cannot hope to assess the importance of political ignorance without measures of policy-specific knowledge. Others believe that citizens tend to be generalists and that measures of policy-specific information add only modestly to our understanding of political knowledge (Delli Carpini and Keeter 1996; Neuman 1986; Smith 1989; Zaller 1986). I will not attempt to resolve this debate in any broad sense, but in most of the cases examined I will show that policy-specific facts have a substantial influence on policy preferences, even for those who are fully informed in terms of general political knowledge.

The first column of Table 1 shows the correlation between each policy-specific information measure and the general knowledge scale from the NES and MIS surveys. (The analyses in this table use only respondents assigned to the control conditions of the MIS questions; i.e., those not provided with information about crime or foreign aid). The correlations (*Eta*'s) range from a fairly weak .19 (for knowledge about the crime rate) to a more robust but still modest .39 (for knowledge about the deficit). More important than the relationship between these two kinds of information is the extent of policy-specific ignorance, especially among highly informed respondents. The second column of Table 1 shows the proportion of all respondents who correctly answered each of the policy-specific information questions, and the third column shows the same proportion for respondents at the high end of the general knowledge scale (scores at or above the 87th percentile for general information for the NES and the 90th percentile for the MIS; the different cut points are necessitated by the different distribution of respondents across the values of general information in the two surveys).

Knowledge of the five policy-specific facts varied dramatically, both for the sample as a whole and for highly informed respondents.⁶ Virtually all the highly

⁴ For most of the spending preference questions I assessed support by dividing respondents who wanted an increase from those who wanted to maintain or decrease spending. Because so few respondents indicated a desire for more foreign aid, I present estimates of the proportion who preferred cuts as compared with those who preferred to maintain or increase foreign aid.

⁵ For example, 3.6% of respondents had the lowest value on the general information scale. I assumed that this group of respondents was distributed evenly across the bottom 3.6 percentiles of the underlying dimension of general information. I therefore assigned these respondents a score of .018, representing the midpoint of this set of percentiles (on a 0-to-1 scale). The next highest value on the information scale contained 3.2% of the sample, and these respondents were assigned the midpoint (.052) of their set of percentiles (which ranged from 3.6 to 6.8).

⁶ For the sample as a whole, the levels of policy-specific information reported in Table 1 are consistent with earlier results (Delli Carpini and Keeter 1996). For example, in the 1988 NES data, 75% were aware that the deficit had increased under Reagan, and 53% knew that unemployment had declined. In comparison, Delli Carpini and Keeter (p. 80) report a 1985 survey in which 83% knew the deficit had risen since 1981 and a 1984 survey in which 48% knew the

TABLE 1. General and Policy-Specific Political Information

Policy-Specific Information	Correlation Between General and Policy-Specific Information ^a	Percentage of All Respondents with Policy-Specific Information	Percentage of Highly Informed Respondents with Policy-Specific Information ^b
1988 NES			
Deficit increased under Reagan	.39***	75.3	93.8
Unemployment declined under Reagan	.25***	53.6	80.0
Environmental efforts declined under Reagan	.36***	21.3	52.2
1998 MIS			
Foreign aid is 5% or less of federal spending	.23***	17.2	36.9
Crime rate declined over past decade	.19	12.2	28.0

Note: General information measures consist of additive 16-item and 7-item scales for the NES and MIS surveys, respectively. (See Appendix for details.) N's: deficit, 1,756; unemployment, 1,758; environment, 1,761; foreign aid, 586; crime, 208. *** $p < .001$.

^aEta with policy-specific information dependent; significance tests are likelihood ratio chi-square.

^bIncludes respondents scoring at or above the 87th percentile of general information for the NES and the 90th percentile for the MIS. (Different cut points are necessitated by the different distribution of respondents across general information categories in the two surveys.)

informed knew that the federal deficit increased during the Reagan administration, and 80% knew that unemployment declined, but only half were aware that environmental efforts declined, fewer than two in five estimated that foreign aid amounted to 5% or less of federal spending, and only 28% knew that crime had declined over the past decade.

Those who are generally more knowledgeable about politics are more likely to know each of the policy-specific facts examined. Nevertheless, the level of specific knowledge varies greatly from fact to fact, and in several cases ignorance of specific information appears widespread, even among those who are best informed according to general knowledge scales. As a consequence, it is possible that even Americans who are fully informed in terms of general political knowledge might hold very different policy preferences if they were also informed about the specifics relevant to particular political judgments.

THE EFFECT OF INFORMATION ON POLITICAL JUDGMENTS

The first stage of my analysis replicates the Althaus (1998) model of information effects and then extends it to include policy-specific knowledge. The model con-

sists of a logistic regression that predicts policy preferences on the basis of political information, demographic and partisan control variables, and interactions between the measures of information and the controls. When both general and policy-specific knowledge are included in the model, an interaction term between these two forms of political information is also included. As in the models developed by Bartels (1996) and Delli Carpini and Keeter (1996), the interaction terms in these analyses allow for the differential effect of information for respondents with different demographic and partisan characteristics. In addition, the interaction term between general and policy-specific information allows for the possibility that general knowledge either facilitates or inhibits the influence of policy-specific information on political judgments.

To assess the effect of information on policy preferences, two separate equations are estimated. The first includes only general political knowledge among the predictors, and the second adds policy-specific information. The model for general information takes the form

$$\text{prob}(Y_i = 1) = \alpha + \beta_1 G_i + \sum \beta_k D_{ik} + \sum \gamma_k (G_i D_{ik}) + e_i, \quad (1)$$

and the model for both general and policy-specific information takes the form

$$\text{prob}(Y_i = 1) = \alpha + \beta_1 G_i + \beta_2 P_i + \beta_3 G_i P_i + \sum \beta_k D_{ik} + \sum \gamma_k (G_i D_{ik}) + \sum \delta_k (P_i D_{ik}) + e_i, \quad (2)$$

where Y_i is respondent i 's policy preference, G_i is respondent i 's general political information score, P_i is respondent i 's policy-specific information score, D_{ik} is respondent i 's scores on a vector of k control variables, and e_i is the error term for the i th observation. By way of example,

current unemployment rate. Similarly, the 1998 MIS found that only 17% estimated within 5 percentage points the proportion of the federal budget devoted to foreign aid, and Delli Carpini and Keeter (1996, 93) report that 24% correctly estimated the federal education budget within that same range. The public's specific knowledge depends greatly on the salience of certain facts to current issues and debates. Nevertheless, it appears that at least over short periods there is considerable stability in this level of knowledge for any given type of information.

TABLE 2. Effect of General and Policy-Specific Ignorance on Political Judgments by Issue: Nonexperimental Analyses (NES)

Political Judgment:	Policy Information: Deficit Increased	Unemployment Declined		Environmental Efforts Declined	
	Unwilling to Pay More in Taxes to Reduce Deficit	Oppose Import Limits to Save Jobs	Increase Spending to Help Unemployed	Increase Spending for Environment	Bush Cares Less for the Environment than Dukakis
A. Observed	74.4 (1.1)	24.3 (1.1)	30.6 (1.0)	63.7 (1.1)	31.8 (1.3)
B. Full general information	56.6 (3.9)	36.8 (3.0)	30.7 (2.6)	71.7 (2.7)	43.5 (3.6)
C. Full general and policy-specific information	51.4 (4.2)	38.3 (4.6)	24.7 (3.8)	89.9 (2.7)	58.1 (5.6)
D. Effect of general political ignorance (B-A)	-17.8 (3.8)	12.5 (3.0)	0.1 (2.4)	8.0 (2.5)	11.7 (3.3)
E. Effect of policy-specific ignorance for the fully informed (C-B)	-5.2 (2.2)	1.5 (2.9)	-6.0 (3.1)	18.2 (2.8)	14.6 (5.1)
N	1,422	1,562	1,620	1,597	1,384

Source: 1988 National Election Study.

Note: Entries in rows A through C show the percentage of respondents expressing the political judgment indicated. Predicted proportions (rows B and C) are based on equations 1 and 2, respectively. Standard errors are in parentheses.

the results of equation 2 for the perception that Bush cared less about the environment than Dukakis are shown in Table A-1.

Following the procedures used by Bartels (1996), Delli Carpini and Keeter (1996), and Althaus (1998), I use the estimated coefficients from the above models to impute statistically hypothetical policy preferences for respondents with less than full information. This is done by attributing to each respondent her observed demographic and partisan characteristics but changing her information score to 1.0. For general information, this score represents the hypothetical fully informed respondent at the 100th percentile of political knowledge; for policy-specific information this score represents "correct" information. Finally, the imputed fully informed preferences of all respondents are aggregated to produce a simulated percentage favoring either side of each political judgment. With this approach, the effect of political ignorance is assessed by comparing the observed policy preferences of the sample with the simulated policy preferences of a hypothetical fully informed sample.

Rows A and B of Table 2 show the observed policy preferences and the fully informed preferences for the NES respondents (row D indicates the difference between the two). Consistent with Althaus's results, the influence of general information on policy preferences varies considerably from issue to issue. For example, observed and fully informed preferences for not raising taxes in order to decrease the budget deficit differ by almost 18 percentage points (74.4% versus 56.6%). Yet, the two categories are almost identical with regard to an increase in government spending to help the unemployed.

The directional effects of general political knowledge revealed in row D of Table 2 are also consistent with Althaus's results. As shown in Table 2, general political

information is associated with both a greater willingness to pay higher taxes for deficit reduction and greater support for environmental spending. Both are consistent with Althaus's (1998, 552) more general finding that "fully informed opinion" reflects a liberal tendency across an array of fiscal issues. Similarly, Althaus's finding that fully informed opinion is more conservative on issues pitting the free market against government control is consistent with the results in Table 2 that show an association between general political knowledge and greater opposition to import limits.

Next, I expand the Althaus (1998) model to include policy-specific information to determine what (if any) additional effect it might have. Row C of Table 2 shows the imputed policy preferences that result by attributing to the entire NES sample both full general information and the policy-specific information indicated; row E reports the difference between the imputed preferences of a sample that is fully informed in terms of general information and a sample that is fully informed in both general and policy-specific terms. Again, there is considerable variation from issue to issue. For example, policy-specific ignorance about unemployment has almost no effect on opposition to import limits. In contrast, ignorance about the decline in environmental efforts is associated with a deficit of 18.2 percentage points in support for environmental spending and of 14.6 percentage points in the perception that George Bush is less concerned about the environment than Michael Dukakis.

These analyses suggest that policy-specific ignorance can have a significant influence on Americans' political judgments, above and beyond the effect of general political information. But drawing causal inferences from quasi-experiments is often risky (e.g., Achen 1986), and it is possible that the apparent effect of

policy-specific information is partly or wholly spurious. Respondents who correctly answer the policy-specific questions differ in a host of ways from those who do not. And despite the long list of control variables used in these analyses, we cannot hope to identify and adequately measure all the characteristics that might distinguish these two groups.

For example, one way in which respondents who correctly and incorrectly answer these policy-specific questions may differ is in their attitude toward President Reagan. Because the policy-specific items on the NES refer to changes in conditions during Reagan's term, his supporters may be reluctant to "admit" facts that reflect poorly on him, such as the federal deficit increase and decline in environmental efforts. Control variables were used in an attempt to address such concerns, and measures of respondents' partisanship should help in this regard.

As a further assessment of whether "willful ignorance" on the part of Reagan supporters might bias the results, I reestimated some of the equations reported in Table 2, using respondents' reported presidential vote in 1984 as an additional control. (Two dummy variables were used to indicate a vote for Reagan or a vote for another presidential candidate; nonvoters served as the comparison group. As with all the other controls, interaction terms were constructed between each control variable and both general and policy-specific knowledge.) Reagan voters did not differ from those voting for Mondale or a minor party candidate in their perceptions of changes in the deficit (80% of Reagan voters and 83% of the other voters said the deficit had increased), but they did differ with regard to environmental efforts (17% of Reagan voters and 38% of the other voters perceived a decline). Consequently, I looked for the effect of "willful ignorance" only in the two analyses of environmental perceptions shown in Table 2.

The results (available from the author) are virtually identical with those shown in Table 2 that do not include 1984 vote choice as a control variable, which suggests that any bias of Reagan supporters on the environmental issue is captured by the other control variables in the model.⁷

Randomized Provision of Policy-Specific Information

In response to the uncertainties involved in drawing causal inferences from traditional survey data, researchers have turned increasingly to survey-based randomized experiments (Piazza, Sniderman, and Tetlock 1989; Sniderman and Grob 1996). Embedding randomized experiments within traditional surveys combines the causal power of randomized assignment with the large-scale and representative nature of the sample survey.

Of course, randomized experiments have shortcom-

ings as well. One concern in this case is that the apparent "change" in political judgments produced by new policy-specific information may reflect a momentary response to the experimental stimulus. This may occur if exposure to the information influences responses by "priming" one aspect of the issue, rather than by prompting a genuine reevaluation of the issue in light of new information (Iyengar and Kinder 1987; Nelson, Clawson, and Oxley 1997; Nelson and Kinder 1996). For example, the crime rate is one consideration among many upon which respondents may focus in forming a preference toward prison spending. By informing some respondents about the crime rate, the interviewer may prime them to place more weight on that aspect. If so, their preferences might be altered not by new knowledge but by greater salience of something already known.

Priming effects cannot be completely ruled out as contributing to experimental effects reported below, but they are unlikely to play an important role. First, the questions were designed to provide both random groups with as similar an experience as possible except for the actual information provided. Thus, both the treatment and control groups were "primed" to think about the crime rate, even though information about it was restricted to the treatment group (see above for question wording). Second, concerns about priming do not apply to the cross-sectional analyses that compare respondents who already know the relevant policy-specific information with those who do not, and as Table 3 shows, the predicted effect of policy-specific information is quite similar using the experimental and cross-sectional approaches. Finally, to assess the broader category of "temporary effects," which might include priming, respondents' preferences on spending for prison construction and foreign aid were assessed twice during the MIS survey: at the beginning, in close proximity to the experimental stimuli (i.e., the news stories about crime and foreign aid), and toward the end of the 40-minute interview.⁸

As shown in row E of Table 3, providing information about the crime rate reduced support for prison spending by 18.9 percentage points using the first measure of policy preference. An otherwise identical analysis using the policy preference measure from the end of the interview showed a reduction in support of 15.4 points. The comparable figures for foreign aid spending are 16.6 points (Table 3) and 10.3 points. Thus, the information effect faded somewhat in both cases, but it persisted through the "distraction" of numerous questions on a range of political issues. The persistence of the information effect does not mean respondents' views were permanently changed by the information provided, but meaningful change need not be permanent. Indeed, in the real world also the influence of any given bit of policy-specific information is likely to fade over time unless it is reinforced through repetition.

⁷ I am indebted to an anonymous reviewer for raising this issue and for suggesting the use of respondents' 1984 presidential vote choice as an additional control.

⁸ To reduce the awkwardness of asking respondents the same question twice, the second item on prison construction and foreign aid differed very slightly from the first (see the Appendix for wording).

TABLE 3. Effect of General and Policy-Specific Ignorance on Political Judgments by Issue: Experimental and Nonexperimental Analyses (MIS)

Information: Political Judgment:	Foreign Aid Is 5% or Less of Federal Spending		Crime Has Decreased
	Cut Spending for Foreign Aid (Nonexperimental)	Cut Spending for Foreign Aid (Experimental)	Increase Spending for Prison Construction (Experimental)
A. Observed	61.5 (2.5)	62.0 (1.8)	33.9 (2.5)
B. Full general information	60.3 (6.4)	58.6 (5.7)	45.8 (8.2)
C. Full general and policy-specific information	46.7 (14.8)	42.0 (5.1)	26.9 (6.4)
D. Effect of general political ignorance (B-A)	-1.2 (6.6)	-3.4 (5.3)	11.9 (8.1)
E. Effect of policy-specific ignorance for the "fully informed" (C-B)	-13.6 (15.4)	-16.6 (7.8)	-18.9 (9.7)
N	564	1,102	409

Source: 1998 Multi-Investigator Study.

Note: The first column reports the nonexperimental analysis of control group respondents only (i.e., those who were not provided with policy-specific information); the second and third columns report the experimental analysis of all respondents. Entries in rows A through C show the percentage of respondents expressing the political judgment indicated. The observed proportions (row A) reflect the preferences expressed by control group respondents. The predicted proportions (rows B and C) for the nonexperimental analyses are based on equations 1 and 2, respectively; the predicted proportions for the experimental analyses are based on equation 3. Standard errors are in parentheses.

A second shortcoming typical of experiments concerns external validity, or the extent to which they successfully mimic real world phenomena. In the MIS experiments, the phenomenon of interest is exposure to policy-specific information from the news. The experimental analogues are the questions about two stories that "have been in the news lately." Exposure to information in this way clearly differs from exposure to the same information in the real world. On the one hand, respondents may feel obliged to pay more attention to the survey interviewer than to the news media. On the other hand, respondents may doubt the interviewer's claim that these stories have been in the news, as well as the implicit claim that the information they contain is accurate.

In sum, neither the experimental provision of policy-specific information nor the nonexperimental comparison of respondents who already do or do not possess this information is without problems. But the consistent findings across these two approaches lend considerable confidence to the results.

As shown in the first two columns of Table 3, the MIS data were used to compare the nonexperimental and experimental approaches to information effects. The first column shows results from the identical nonexperimental model used above to analyze the NES data. (This analysis uses only respondents in the control condition of the MIS data: those who were asked for their perceptions of foreign aid but were not provided with correct information.) Based on this model, a fully informed sample would express nearly identical attitudes toward foreign aid (diminished by only 1.2 percentage points), but if the entire sample also possessed "correct" information (specifically, that foreign aid amounts to 5% or less of federal spending),

then opposition to foreign aid is predicted to fall by more than 13 additional percentage points.

The second column of Table 3 reports a parallel analysis of attitudes toward foreign aid. In this case, however, the effect of policy-specific knowledge is assessed by comparing preferences expressed by respondents in the treatment and control conditions. The same logistic equation is estimated as in equation 2, except that in place of a measure of respondents' observed policy-specific information (P), I use a variable (T) to indicate whether the respondent was randomly assigned to the treatment group (scored 1) or the control group (scored 0):

$$\text{prob}(Y_i = 1) = \alpha + \beta_1 G_i + \beta_2 T_i + \beta_3 G_i T_i + \sum \beta_k D_{ik} + \sum \gamma_k (G_i D_{ik}) + \sum \delta_k (T_i D_{ik}) + e_i. \quad (3)$$

Imputed preferences for a hypothetical sample with full general information are estimated by setting G to 1 and T to 0; preferences for a hypothetical sample with both full general information and specific knowledge about foreign aid are derived by setting both G and T to 1.⁹ Like the nonexperimental analyses, this model allows for policy-specific information to have differing effects for respondents with different demographic characteristics as well as different levels of general political knowledge.

Row E of Table 3 shows that the estimated effect of

⁹ Note that setting $T = 0$ in equation 3 reflects the predicted policy preferences of a sample with the observed level of policy-specific information. In contrast, setting $P = 0$ in equation 2 would reflect the preferences of a sample in which all respondents were ignorant of the relevant policy-specific information. Consequently, the figures in row B of tables 2 and 3, and row A of Table 4, are estimated with $T = 0$ and P at its observed level.

telling respondents about foreign aid is quite similar to the estimated effect of this knowledge based on the nonexperimental model. The first column in row E indicates that opposition to foreign aid among fully informed respondents would be 13.6 percentage points lower if they were also aware that foreign aid accounts for 5% or less of federal spending. The second column of row E shows that actually giving this information to a random subsample of respondents leads to a predicted 16.6 percentage point decrease in opposition to foreign aid among those who are fully informed in general terms. Based on this one example, at least, the estimates derived from the nonexperimental model appear to be reasonable approximations of the causal influence of policy-specific information.

This same comparison between experimental and nonexperimental techniques cannot be made using the crime questions. First, the number of available cases is much smaller because most of the respondents were assigned to other experimental treatments not used in these analyses. Second, only 12% of the respondents in the control group perceived a decline in crime over the past decade (Table 1). This represents only 25 cases, too few to produce a reliable estimate of the effect of this information.

The public's ignorance about the crime rate presents an obstacle to nonexperimental analysis, but there is no such obstacle to the experimental approach, since the 200 cases in the treatment group were told that crime had been falling. The results of this analysis are reported in the last column of Table 3. When informed that crime had declined, estimated support for prison construction among fully informed respondents fell by 18.9 percentage points.

The five specific examples of policy-relevant information and the seven political judgments examined in tables 2 and 3 are a small sample of all possible combinations of preferences and information. They were based on what happened to be available from existing surveys (in the case of the NES items) or were chosen because I expected to find the public misinformed about potentially influential policy facts. These results cannot, therefore, be taken as representative of some larger set of political judgments. Nevertheless, the findings are consistent enough to indicate that (1) ignorance of policy-specific facts is extremely important in creating a gap between the political preferences that Americans express and the preferences they would express if they were well informed about the issues at hand, and (2) measures of general political knowledge do not adequately capture the importance of policy-specific ignorance.

For the seven political judgments I examined, the difference between observed and fully informed preferences averaged 9.3 percentage points (roughly compatible with Althaus's [1998] average of 7.1 percentage points for the 45 issues he analyzed). But for respondents who are fully informed in terms of general political knowledge, I found an average difference of 11.6 percentage points between those who possess policy-specific information and those who lack it. In five of the seven cases, lack of general political knowl-

edge (and its cognitive correlates) has a smaller effect on political judgments than does ignorance of policy-specific information. Clearly, any assessment of the gap between expressed and "enlightened" preferences must take account of shortfalls in the public's knowledge of policy-specific facts as well as shortfalls in general political knowledge.

POLICY-SPECIFIC INFORMATION AND IGNORANCE: FOR WHOM DO THEY MATTER?

The analyses above reveal the importance of policy-specific ignorance for the political judgments made by fully informed respondents. Do these effects differ for people with different levels of general political knowledge?

One set of considerations suggests that "providing" policy-specific facts—either experimentally or by statistical imputation—should have less effect on the political judgments of respondents with higher levels of general political knowledge. First, respondents high in general knowledge are likely to have a larger stock of other information relevant to the political judgment at hand. Studies of learning and persuasion suggest that psychological judgments are based on a weighted average of available information. Consequently, each new fact becomes less influential as an individual's stock of existing information grows (e.g., Anderson 1981).¹⁰ In addition, respondents with more general knowledge are more likely to already possess the particular policy-specific fact examined (Table 1).¹¹ For both reasons, policy-specific ignorance should be less important in explaining the views of those with high levels of general political knowledge.

But other considerations suggest that general knowledge should enhance rather than diminish the importance of policy-specific information. Respondents who score high in general knowledge possess greater cognitive capacity and a greater interest in politics (Delli Carpini and Keeter 1996), and they are likely to have more integrated belief systems (Converse 1964). These resources may provide the ability and motivation to incorporate new policy-specific information and reshape one's political judgments accordingly.¹² For ex-

¹⁰ In Zaller's (1992) model of political attitude formation, this phenomenon is labeled "inertial resistance." Note that the "dilution" of new information in a pool of existing considerations leads to a lower probability of attitude change, but it does not constitute "resistance" to the new information per se. For an earlier statement of this perspective, see Converse 1962.

¹¹ The greater likelihood that the politically knowledgeable will have encountered specific information is reflected in Zaller's (1992) discussion of "reception." It is important to note that if one is assessing the influence of information, a higher probability of reception is associated with a greater likelihood that the information will affect an individual's policy views. But if one is assessing the importance of ignorance, a higher probability of reception is associated with a lower likelihood that ignorance has "distorted" a given individual's policy views.

¹² It is important to distinguish between persuasive and informational communications. To the extent that a persuasive message is propaganda, we would expect the smallest change in policy preferences among the most sophisticated and informed individuals. To the

ample, Rhee and Capella (1997) and Capella and Jamieson (1997) found that people who scored high in political sophistication learned more from news stories on health care and a mayoral election. Fiske, Lau, and Smith (1990) similarly found that people with higher levels of political knowledge are more efficient and effective in processing information from newspaper articles about local political issues.

The relative strength of these two sets of considerations will determine the importance of policy-specific information across levels of general political information. If general knowledge and its correlates prompt resistance to new information, we would expect policy-specific information to have the strongest influence on the political judgments of the least knowledgeable respondents. But if cognitive ability and motivation dominate, then we would expect policy-specific information to have the strongest effect among those who score highest in general political knowledge. And if these two sets of offsetting factors are both important, then we might find either similar importance across levels of general knowledge or perhaps a curvilinear effect, that is, policy-specific ignorance might have its greatest influence among those with moderate levels of political knowledge (because a very high level of general political knowledge leads to resistance and a very low level to indifference or incomprehension).

As a first step I conducted a series of tests for nonmonotonicity in the importance of policy-specific ignorance. Using dummy variables in place of the continuous measure of general political knowledge, I estimated the following equation:

$$\begin{aligned} \text{prob}(Y_i = 1) = & \alpha + \beta_1 G1_i + \beta_2 G2_i + \beta_3 P_i \\ & + \beta_4 G1_i P_i + \beta_5 G2_i P_i + \sum \beta_k D_{ik} + \sum \gamma_k (G1_i D_{ik}) \\ & + \sum \delta_k (G2_i D_{ik}) + \sum \epsilon_k (P_i D_{ik}) + e_i, \end{aligned} \quad (4)$$

where Y_i is respondent i 's policy preference, $G1_i$ is respondent i 's score on a dummy variable that indicates low general political information, $G2_i$ is respondent i 's score on a dummy variable that indicates high general political information, P_i is respondent i 's policy-specific information score, D_{ik} is respondent i 's scores on a vector of k control variables, and e_i is the error term for the i th observation. The analogous model for the experimental data from the MIS substitutes the indicator of randomized assignment (T) for the measure of policy-specific knowledge (P), as was done in equation 3.

Lacking strong theoretical expectations for the specific shape of any nonmonotonic pattern that might be found, I used two different specifications in constructing the measures of general political knowledge. The exact percentages differed in the NES and MIS analy-

ses because the cut points are constrained by the distribution of respondents on the general knowledge measures. For one set of equations I defined "high information" as the top 30% (NES) or 28% (MIS) of respondents on the general knowledge scale; "low information" was defined as the bottom 32% (NES) or 34% (MIS). For the second set of equations, I included only the top 13% (NES) or top 10% (MIS) in the "high information" category; "low information" included the bottom 16% (NES) or 20% (MIS).

The 14 analyses (two sets of cut points times seven political judgments) showed little evidence of departure from the logistic model. Only one of the 14 χ^2 tests comparing the logistic model (equations 2 and 3) with the dummy variable model in equation 4 was significant.¹³ Given the apparent monotonicity, I will follow the lead of earlier analysts in using a logistic function to assess the relationship between policy-specific information and general political knowledge.¹⁴

Sections A and B in Table 4 show the observed and fully informed policy preferences for respondents at the 35th, 65th, and 100th percentiles of general political knowledge. These percentiles were chosen to represent rather poorly informed, moderately well-informed, and fully informed respondents, respectively. Section C of Table 4 shows the effect of policy-specific ignorance at each of these levels of general knowledge (i.e., the difference between imputed scores based on the observed level of policy-specific information at each percentile of general knowledge and the imputed scores based on a sample in which all respondents held the relevant policy-specific information).

Two of the seven political judgments show no appreciable differences in the importance of policy-specific ignorance across levels of general knowledge ("oppose import limits to save jobs" and "Bush cares less for the environment than Dukakis"). For the other five political judgments, policy-specific ignorance is most important in distorting the policy preferences of those who score highest in general knowledge, and in three of these cases the differences are quite substantial (regarding spending for the environment, foreign aid, and prison construction). These results support the "resource" hypothesis that policy-specific facts are more likely to be incorporated into the political judgments of those who are more knowledgeable, interested, and sophisticated about politics. Despite their greater store of political knowledge, these respondents do not appear to resist new information, at least not the kind of specific factual information examined here.

A complication in interpreting the differing importance of policy-specific ignorance across levels of general political knowledge stems from the possibility that people who score low on general knowledge may be

extent that the message is informational, we might expect the largest changes in policy preferences among this group (see McGuire 1968). Identifying the extent to which a message falls into each of these categories can be problematic. Nevertheless, it seems safe to say that most people would regard the kind of policy-relevant facts examined here as primarily informational (although they can, of course, be included in broader, more propagandistic, messages).

¹³ Using the 30%–32% cutpoints only, the effect of policy-specific ignorance about the Reagan administration's environmental policies was significantly smaller for moderately informed respondents than for those with either high or low general political knowledge.

¹⁴ Bartels (1996) reports that his examination of a variety of nonlinear functions (both monotonic and nonmonotonic) did not produce any significant improvement in fit over his linear model of general information effects.

TABLE 4. Effect of Policy-Specific Ignorance on Political Judgments by Level of General Political Knowledge and Issue

Information:	Deficit Increased	Unemployment Declined		Environmental Efforts Declined		Foreign Aid Is Less Than 1% of Federal Spending	Crime Has Declined
Political Judgment:	Unwilling to Pay More Taxes to Reduce Deficit	Oppose Import Limits to Save Jobs	Increase Spending to Help Unemployed	Increase Spending for Environment	Bush Cares Less for Environment Than Dukakis	Cut Spending for Foreign Aid	Increase Spending for Prison Construction
A. Observed level of policy-specific information							
General knowledge percentile							
35th percentile	81.8 (1.5)	18.2 (1.6)	29.7 (1.5)	62.2 (1.7)	26.8 (1.7)	66.5 (2.9)	35.0 (5.2)
65th percentile	72.1 (1.8)	25.6 (1.4)	29.2 (1.8)	67.8 (1.8)	34.6 (2.0)	63.3 (3.3)	38.8 (5.1)
100th percentile	56.6 (3.9)	36.8 (3.0)	30.7 (2.6)	71.7 (2.7)	43.5 (3.6)	58.6 (5.7)	45.8 (8.2)
B. Full policy-specific information							
General knowledge percentile							
35th percentile	82.9 (1.8)	16.7 (2.0)	27.7 (2.4)	64.1 (4.7)	38.8 (4.9)	59.2 (3.3)	36.6 (5.5)
65th percentile	71.5 (2.1)	25.0 (1.8)	25.1 (2.5)	79.4 (2.8)	48.6 (3.5)	50.6 (3.3)	30.2 (4.5)
100th percentile	51.4 (4.2)	38.3 (4.6)	24.7 (3.8)	89.9 (2.7)	58.1 (5.6)	42.0 (5.1)	26.9 (6.5)
C. Effect of policy-specific ignorance (B-A)							
General knowledge percentile							
35th percentile	1.1 (1.2)	-1.5 (1.4)	-2.0 (1.9)	1.9 (4.5)	12.0 (4.7)	-7.3 (4.5)	1.6 (8.0)
65th percentile	-0.6 (1.0)	-0.6 (1.3)	-4.1 (2.0)	11.6 (2.8)	14.0 (3.1)	-12.7 (4.5)	-8.6 (6.6)
100th percentile	-5.2 (2.2)	1.5 (2.9)	-6.0 (3.1)	18.2 (2.8)	14.6 (5.1)	-16.6 (7.8)	-18.9 (9.7)
<i>N</i>	1,422	1,562	1,620	1,597	1,384	1,102	409

Sources: 1988 National Election Study and 1998 Multi-Investigator Study.

Note: Entries in sections A and B show the predicted percentage of respondents expressing the political judgment indicated. The first five columns report results based on nonexperimental analyses of NES data using equation 2; the last two columns report results based on experimental analyses of the MIS data using equation 3. Standard errors are in parentheses.

more likely to answer the policy-specific questions correctly by taking a random guess than are people who score high on general information (who may be more likely to answer these questions correctly because they actually know the answer). If so, this would attenuate the apparent association between general and policy-specific information and lead to an alternative interpretation of the finding that policy-specific ignorance matters more for those who score high in general information: Their correct answer is a better indicator of actually possessing the policy-specific fact in question.

Although some part of the relationship between general political knowledge and the importance of policy-specific ignorance may be due to "differential guessing" among respondents at different levels of general political knowledge, a number of factors suggest that any such biases are likely to be quite small. First, two of the three Reagan retrospective questions

have an explicit "don't know" filter (e.g., "Have federal efforts to protect the environment increased, decreased, or stayed about the same as they were in 1980, or haven't you paid much attention?"). Such filters reduce the tendency to guess when respondents do not know an answer (e.g., Schuman and Presser 1981). Second, among respondents who scored at the bottom of the general political information scale, the proportion who gave a correct answer to the environmental question was only 5%; 73% said "don't know." Similarly, only 7% of the least well-informed respondents gave the correct answer on the crime question.

These small proportions suggest that the tendency of poorly informed respondents to guess is not strong. These data also suggest that, unless people were more inclined to guess on the other policy-specific factual questions than on these, most of the poorly informed who answered the other factual questions correctly must have possessed the relevant information. Finally,

TABLE 5. Effect of Policy-Specific Information on Political Judgments by Level of General Political Knowledge and Issue

Information:	Deficit Increased	Unemployment Declined		Environmental Efforts Declined	
	Unwilling to Pay More Taxes to Reduce Deficit	Oppose Import Limits to Save Jobs	Increase Spending to Help Unemployed	Increase Spending for Environment	Bush Cares Less for the Environment Than Dukakis
Political Judgment:					
A. No policy-specific information					
General knowledge percentile					
35th percentile	80.6 (2.7)	20.2 (2.3)	32.5 (2.2)	61.0 (1.9)	25.0 (2.0)
65th percentile	74.7 (4.5)	25.8 (3.0)	34.4 (2.8)	61.8 (2.1)	28.3 (2.2)
100th percentile	66.0 (7.8)	33.6 (5.3)	38.3 (4.5)	61.5 (3.4)	33.0 (3.8)
B. Full policy-specific information					
General knowledge percentile					
35th percentile	82.9 (1.8)	16.7 (2.0)	27.7 (2.4)	64.1 (4.7)	38.8 (4.9)
65th percentile	71.5 (2.1)	25.0 (1.8)	25.1 (2.5)	79.4 (2.8)	48.6 (3.5)
100th percentile	51.4 (4.2)	38.3 (4.6)	24.7 (3.8)	89.9 (2.7)	58.1 (5.6)
C. Effect of policy-specific information (B-A)					
General knowledge percentile					
35th percentile	2.3 (3.1)	-3.5 (2.9)	-4.8 (2.8)	3.1 (5.0)	13.8 (5.2)
65th percentile	-3.2 (4.5)	-0.8 (3.5)	-9.3 (3.7)	17.6 (3.5)	20.3 (4.0)
100th percentile	-14.6 (7.7)	4.7 (7.1)	-13.6 (6.3)	28.4 (4.0)	25.1 (6.8)
N	1,422	1,562	1,620	1,597	1,384

Source: 1988 National Election Study.

Note: Entries in rows A and B show the predicted percentage of respondents expressing the political judgment indicated based on equation 2. Standard errors are in parentheses.

guessing is unlikely to produce a correct answer on the open-ended question about level of foreign aid spending, and that item shows the same pattern of relationship with general knowledge as do the close ended questions, which can be guessed at more easily (Table 4).

The results in Table 4 reveal the practical importance of policy-specific ignorance at different levels of general knowledge. But these figures reflect both the effect of existing levels of policy-specific ignorance and the influence of policy-specific information on political judgments. For a better assessment of the more theoretically oriented question of how responses to policy-specific information vary across levels of political information, I next compare the imputed scores under the condition that all respondents are ignorant of the policy-specific facts or that all respondents are informed. (The randomized experiment in the MIS survey provides policy-specific information to the treatment group but cannot "take away" such information from the control group. Consequently, the comparison of the wholly ignorant and wholly informed conditions must rely on statistical imputation rather than the experimental approach.)

Section A of Table 5 shows the imputed judgments

of a hypothetical sample in which all respondents lack the relevant policy-specific information, section B shows the imputed scores for a sample in which all respondents possess this information, and section C gives the difference between the two.¹⁵ Unlike tables 2-4, Table 5 does not report the actual (i.e., observed) levels of policy-specific information. Consequently, the tendency for respondents with higher levels of general political knowledge to possess the relevant policy-specific facts does not affect the results of these analyses, and the pattern that emerged in Table 4 is even more pronounced here. For each of these political judgments, the influence of policy-specific information is greatest at the highest level of general political knowledge. With the exception of opposition to import limits, in all cases knowledge of policy-specific facts makes a substantial difference in the political judgments of highly informed respondents. For the poorly informed, however, only knowledge about environ-

¹⁵ Following the analogous procedure used to impute scores for a fully informed sample, I computed the scores reported in Table 5 by assigning to each respondent a score of 0 (section A) or 1 (section B) for policy-specific information and then aggregating the predicted probabilities as estimated with equation 2.

mental efforts during the Reagan administration seems to have any effect, and that appears to be restricted to judgments about the environmental concerns of Bush and Dukakis, not government spending to protect the environment.

The sort of policy-specific information examined here seems to be important in shaping the political judgments of the most politically sophisticated Americans. But the effect is weaker and less consistent even for those with moderately high levels of sophistication (i.e., at the 65th percentile), and it is mostly absent among the poorly informed. It appears that lack of political sophistication affects political judgments in two ways: directly, as previous research has demonstrated, and by diminishing the likelihood that policy-specific information will be incorporated into political judgments.

DISCUSSION

The analyses reveal considerable variation in the importance of policy-specific ignorance across the seven political judgments examined. Fully informed respondents with policy-specific information differ substantially from those who lack such information in terms of their perceptions of where Bush and Dukakis stand on the environment as well as in terms of preferences for spending on prisons, foreign aid, and the environment (tables 2 and 3). Policy-specific ignorance is much less important in explaining preferences for spending to help the unemployed or willingness to pay higher taxes to reduce the deficit, and it seems to have no effect on support for limiting imports in order to protect American jobs.

What accounts for this variation across political judgments? One factor already discussed is the variation in ignorance of the various policy-specific facts examined. In the cases of heaviest influence, between one-half and three-quarters of fully informed respondents lacked the relevant policy facts.¹⁶ In contrast, only one in five of the fully informed was unaware that unemployment had declined, and only one in twenty was unaware that the federal deficit had grown.

Nevertheless, when we assess not the influence of policy-specific ignorance (which reflects, in part, the extent of ignorance about any particular fact) but the influence of policy-specific information (which reflects the effect of information on preferences irrespective of the prevalence of that information in the population), we still find considerable variation across the judgments examined (Table 5). Two factors contribute to this variation. The first is variation in the perceived relevance of the information to respondents' judgments of the issue at hand. For example, knowledge about a change in the unemployment rate may be unrelated to attitudes toward import limits because these attitudes are rooted in other kinds of considerations (such as nationalism or support for free trade). In this case, the information may be perceived as

simply not particularly relevant to the judgment at hand. In other cases, the information may be perceived as more relevant. Thus information about unemployment, which has little effect on attitudes toward import limits, has a larger influence on preferences for spending to help the unemployed (Table 5).

The second factor is that the precise content of policy-specific information can affect its influence on political judgments. For example, unemployment was about two percentage points lower in 1988 than in 1980. Knowledge of the decline might have had a larger influence on policy preferences if the size of the decline had been larger.

Further complicating the situation is that both perceived relevance and informational content are mediated by personal factors. My analyses allow the effect of policy-specific information (and general political knowledge) to vary among respondents with different demographic characteristics, but other individual characteristics may be more important (and more theoretically significant). For example, people with conflicting considerations on a particular issue may be more sensitive to policy-specific information on that issue. Thus, the influence of the unemployment rate on support for import limits may be substantial for those who place a high value on both American jobs and free trade, but it may be minimal for those whose thinking about import policy is dominated by nationalist feelings and concern for Americans' jobs, since both of these considerations lead to the same policy conclusion.

The broader project implied by these observations is to develop a theory of policy-specific information effects that can identify in advance the individual characteristics and the combination of information and political judgments that will produce the strongest and weakest effects.

CONCLUSION

Previous research demonstrates that "information matters" in shaping the public's political judgments. This article reveals that the kind of information that matters is not only general political knowledge, interest, or cognitive capacity but also the specific facts germane to particular political issues. More specifically, three conclusions can be drawn. First, policy-specific facts can be an important influence on political judgments. Second, this influence is not adequately captured by measures of general political knowledge. Third, the consequences of policy-specific ignorance and the effects of policy-specific information are greatest for Americans with the highest levels of general political knowledge.

It may seem obvious that respondents who know that environmental efforts declined during the Reagan administration are less likely to view George Bush as concerned with the environment, or that informing respondents that foreign aid represents less than one percent of the federal budget diminishes their desire to cut foreign aid spending. But the power of such information to shape the public's political judgments is anything but obvious. First, as tables 4 and 5 showed, such facts have a weak and inconsistent effect on the

¹⁶ That is, environmental efforts declined during the Reagan administration, crime declined over the previous decade, and foreign aid represents 5% or less of federal spending.

preferences expressed by less politically knowledgeable Americans. For these citizens, policy-relevant facts seem to carry little weight.

Furthermore, previous analysts of policy preferences have not expressed much faith that the kind of policy-specific information discussed here plays an important role in shaping Americans' political views. Zaller's (e.g., 1992) influential studies of change in mass opinion focus strongly on elite leadership as the source of preference formation and change. Even the foremost proponents of the "rational public" attribute the public's rationality primarily to the use of elite cues rather than raw policy-relevant information. Page and Shapiro (1992) allow that individuals may at times recognize the significance of new policy-relevant facts and adjust their policy preferences accordingly. But "more likely," they write, "responsiveness to new information results from individuals using cognitive shortcuts or rules of thumb, such as reliance upon trusted delegates or reference figures (friends, interest groups, experts, political leaders) to do political reasoning for them and to provide guidance" (p. 17).

The findings presented here do not contradict the belief that elite cues are more important in shaping the public's political judgments than are raw policy-relevant facts. But they do suggest that, at least for the more politically knowledgeable and sophisticated segments of the public, the influence of raw facts can be substantial.

Despite the central importance of the public's policy preferences to democratic theory, we remain surprisingly ignorant of the forces that shape them. Future research needs to bring together microlevel studies that examine the effect on individuals of different kinds of politically relevant messages and macrolevel studies of the distribution of such messages in American society. For example, attitudes toward anticrime policy surely reflect some combination of factual information (or misinformation), policy endorsements from social and political elites, personal experience with crime, deeply seated beliefs about human nature, and the subtextual messages about crime that permeate both fictional and nonfictional media. Much creative and valuable work along these lines has already been accomplished, but the patches of illumination make the darkness that surrounds them all the more conspicuous. The findings presented here contribute to this larger project by demonstrating the value of directing more light toward the role of basic policy-relevant perceptions and misperceptions in shaping the public's political judgments.

APPENDIX

Survey Items from the 1998 Multi-Investigator Study

General Information. Now for some questions about the federal government. Which party has the most members in the House of Representatives in Washington? (Democrats: 18%; Republicans: 56%; don't know: 26%)

How much of a majority is required for the U.S. Senate and House of Representatives to override a presidential veto—one-half plus one vote, three-fifths, two-thirds, or three-quarters? (one-half plus one vote: 17%; three-fifths:

5%; two-thirds: 46%; three-quarters: 13%; other: 1%; don't know: 18%)

In general, thinking about the political parties in Washington, would you say Democrats are more conservative than Republicans, or Republicans are more conservative than Democrats? (Democrats: 29%; Republicans: 60%; both equal: 4%; don't know: 7%)

Whose responsibility is it to determine if a law is constitutional or not—is it the president, Congress, or the Supreme Court? (president: 5%; Congress: 22%; Supreme Court: 68%; don't know: 4%)

How many four-year terms can the president of the United States serve? (two: 89%; some other number: 9%; don't know: 3%)

How many members of the U.S. Supreme Court are there? (nine: 20%; some other number: 39%; don't know: 41%)

What political office is now held by Al Gore? (vice president: 83%; some other office: 2%; don't know: 16%)

Policy-Specific Information and Policy Preferences. Please give me your best guess for this next question. For every dollar spent by the federal government in Washington, how much of each dollar do you think goes for foreign aid to help other countries? (mean: 26 cents; standard deviation: 20 cents) [Asked only of respondents who were not provided with correct information about foreign aid.]

Would you say there is more, less, or about the same amount of crime in the United States today as compared to 10 years ago? (more: 73%; less: 12%; same: 15%; don't know: 1%) [Asked only of respondents who were not provided with correct information about crime.]

How do you feel about the amount of money the federal government (in Washington) spends on foreign aid to other countries? Do you think the federal government should spend more on foreign aid, less, or about the same as it does now? (more: 9%; less: 56%; same: 34%; don't know: 1%)

How do you feel about the amount of money state and federal governments spend on building prisons? Do you think we should spend more on building prisons, less, or about the same as we do now? (more: 30%; less: 27%; same: 42%; don't know: 2%)

Reassessment of Policy Preferences (Asked Near the End of the MIS Interview). For each of the following government programs, please tell me if you think the government is spending too little money, too much money, or about the right amount. How about for foreign aid to other countries? Would you say the federal government in Washington is spending too little money, too much money, or about the right amount for foreign aid? (too little: 7%; too much: 61%; about right: 31%; don't know: 1%)

How about for building prisons? Would you say the state and federal governments are spending too little money, too much money, or about the right amount for building prisons? (too little: 25%; too much: 28%; about right: 46%; don't know: 1%)

Control Variables (Dummy Variable Categories Are Indicated by Italics). What is your present religious preference? Is it Protestant, Catholic, Islam, Jehovah's Witness, or something else? (*Protestant*: 48%; *Catholic*: 23%; *Other religion*: 20%; none: 9%)

What is the highest grade or year of school you completed? (eighth grade or lower: 2%; some high school: 10%; high school graduate (or GED): 40%; some college: 25%; college graduate: 15%; some graduate work or graduate degree: 9%)

What race or ethnic group do you consider yourself? (*Black*: 13%; *nonblack*: 87%)

Are you male or female? (male: 48%; female: 52%)

Are you currently married, living with someone in a marriage-like relationship but not legally married, separated, divorced, widowed, or have you never been married? (married: 58%; other: 42%)

Do you have any children? How many of your children are under 18? (one or more children under 18: 39%; no children under 18: 61%)

Region. (*East*: 17%; *Midwest*: 26%; *South*: 34%; *West*: 23%)

Which of the following best describes that area you live in—urban, rural, or suburban? (*Urban*: 32%; *Rural*: 32%; *suburban*: 36%)

Are you currently employed full-time, employed part-time, unemployed, retired, a student, keeping house, or what? (*Retired*: 15%; *Keeping house*: 5%; other: 80%)

Generally speaking, do you usually think of yourself as a Democrat, a Republican, an Independent, or what? (*Democrat*: 37%; *Republican*: 27%; other: 36%)

General Knowledge Items from the 1988 National Election Study

V555 (interviewer rating): Respondent's general level of information about politics and public affairs seemed: (very high: 10%; fairly high: 26%; average: 32%; fairly low: 21%; very low: 10%)

V871: I'm going to read the names of various public figures. We want to see how much information about them gets out to the public from television, newspapers, and the like. The first name is Ted Kennedy. Do you happen to know what job or political office he now holds? (Correctly identifies Kennedy as senator (from Massachusetts): 69%; identification is incomplete or wrong: 6%; makes no attempt to guess: 25%)

V872: George Schultz? (Correctly identifies Schultz as secretary of state (foreign affairs): 39%; identification is incomplete or wrong: 11%; makes no attempt to guess: 50%)

V873: William Rehnquist? (Correctly identifies Rehnquist as Chief Justice of the Supreme Court: 3%; identification is incomplete or wrong: 20%; makes no attempt to guess: 76%)

V874: Mikhail Gorbachev? (Correctly identifies Gorbachev as leader of the (Russian) Communist Party or of the Soviet Union (Russia)—i.e., General Secretary of the Communist Party; President or Prime Minister of the Soviet Union/Russia; the Russian leader; Head Red: 71%; identification is incomplete: 9%; makes no attempt to guess: 20%)

V875: Margaret Thatcher? (Correctly identifies Thatcher as Prime Minister of Great Britain (England): 60%; identification is incomplete: 19%; makes no attempt to guess: 21%)

V876: Yasser Arafat? (Correctly identifies Arafat as leader of the Palestinian Liberation Organization—i.e., Chairman of the PLO; leader of the Palestinian people; "PLO"; Palestinian leader; leader of Palestine: 37%; identification is incomplete: 19%; makes no attempt to guess: 44%)

V877: Jim Wright? (Correctly identifies Wright as Speaker of the House of Representatives: 14%; identification is incomplete: 9%; makes no attempt to guess: 77%)

V878: Do you happen to know which party had the most members in the House of Representatives in Washington before the election (this/last) month? (Republicans: 12%; Democrats: 59%; No, don't know: 28%)

V879: Do you happen to know which party had the most members in the U.S. Senate before the election

(this/last) month? (Republicans: 11%; Democrats: 54%; No, don't know: 35%)

V231: We hear a lot of talk these days about liberals and conservatives. Here is a 7-point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Where would you place Michael Dukakis on this scale? (extremely liberal: 9%; liberal: 22%; slightly liberal: 15%; moderate; middle of road: 14%; slightly conservative: 7%; conservative: 6%; extremely conservative: 2%; don't know: 24%)

V232: Where would you place George Bush (on this scale)? (extremely liberal: 2%; liberal: 3%; slightly liberal: 5%; moderate; middle of road: 11%; slightly conservative: 18%; conservative: 31%; extremely conservative: 9%; don't know: 21%)

V234: Where would you place the Republican Party (on this scale)? (extremely liberal: 2%; liberal: 6%; slightly liberal: 5%; moderate; middle of road: 12%; slightly conservative: 17%; conservative: 33%; extremely conservative: 10%; don't know: 15%)

V235: Where would you place the Democratic Party (on this scale)? (extremely liberal: 6%; liberal: 25%; slightly liberal: 20%; moderate; middle of road: 16%; slightly conservative: 10%; conservative: 7%; extremely conservative: 2%; don't know: 14%)

V321: There is much concern about the rapid rise in medical and hospital costs. Some people feel there should be a government insurance plan which would cover all medical and hospital expenses for everyone. Others feel that all medical expenses should be paid by individuals, and through private insurance plans like Blue Cross or other company paid plans. Where would you place the Republican Party (on this scale)? ([1] government insurance plan: 2%; [2]: 1%; [3]: 4%; [4]: 13%; [5]: 15%; [6]: 15%; [7] private insurance plan: 12%; don't know: 21%; haven't thought much about it: 16%)

V322: Where would you place the Democratic Party (on this scale)? ([1] government insurance plan: 8%; [2]: 12%; [3]: 16%; [4]: 13%; [5]: 7%; [6]: 4%; [7] private insurance plan: 2%; don't know: 22%; haven't thought much about it: 16%)

V307: Some people think the government should provide fewer services, even in areas such as health and education in order to reduce spending. Suppose these people are at one end of the scale at point 1. Other people feel it is important for the government to provide many more services even if it means an increase in spending. Suppose these people are at the other end, at point 7. And of course, some other people have opinions somewhere in between at points 2, 3, 4, 5, or 6. Where would you place the Republican Party (on this scale)? ([1] government provide many fewer services, reduce spending a lot: 6%; [2]: 12%; [3]: 20%; [4]: 22%; [5]: 11%; [6]: 5%; [7] government provide many more services, increase spending a lot: 3%; don't know: 21%)

V308: Where would you place the Democratic Party (on this scale)? ([1] government provide many fewer services, reduce spending a lot: 1%; [2]: 3%; [3]: 6%; [4]: 18%; [5]: 22%; [6]: 19%; [7] government provide many more services, increase spending a lot: 8%; don't know: 22%)

V315: Some people believe that we should spend much less money for defense. Others feel that defense spending should be greatly increased. Where would you place the Republican Party (on this scale)? ([1] greatly

TABLE A-1. Logistic Analysis of Preference for Environmental Spending

	Main Effects	Interactions with General Information	Interactions with Policy-Specific Information
General information	2.390 (.1792)	—	—
Policy-specific information	1.844 (.1579)	3.119 (.843)	—
Income	.858 (.600)	−1.275 (1.067)	−.092 (.881)
Age	−1.257 (.756)	2.210 (1.469)	1.277 (1.336)
Married	−.280 (.283)	.749 (.526)	−.101 (.435)
Education	1.907 (.910)	−1.178 (1.679)	−1.321 (1.468)
Republican	.624 (.368)	−2.335 (1.018)	−2.311 (1.155)
Democrat	.268 (.364)	−.911 (1.027)	−2.221 (1.132)
Black	−.139 (.365)	−.456 (.792)	.874 (.628)
Female	−.401 (.287)	.438 (.514)	.685 (.433)
Union family	−.118 (.342)	.304 (.623)	.318 (.471)
Homeowner	−.058 (.285)	−.470 (.547)	−.285 (.464)
Children under 18	.228 (.267)	−.649 (.505)	.184 (.407)
Worse off than last year	−.051 (.268)	−.547 (.515)	.414 (.396)
Protestant	−.051 (.428)	.025 (.724)	−.667 (.593)
Catholic	.730 (.475)	−1.073 (.815)	−1.026 (.642)
East	−.792 (.446)	1.745 (.775)	.136 (.609)
Midwest	−.252 (.409)	.270 (.691)	.186 (.498)
South	−.201 (.392)	.076 (.674)	.371 (.511)
Urban	−.101 (.332)	−.117 (.591)	.423 (.482)
Rural	−.273 (.272)	−.187 (.515)	−.284 (.444)
Retired	.043 (.493)	−.004 (.876)	−1.456 (.714)
Homemaker	.535 (.381)	−1.043 (.843)	.355 (.714)
Executive/professional	−.321 (.456)	.521 (.742)	.419 (.552)
Clerical	1.001 (.453)	−1.670 (.842)	.272 (.677)
Technical/sales	.003 (.467)	.300 (.805)	−.120 (.616)
Constant	−.848 (.856)	—	—

Source: 1988 National Election Study.

Note: The dependent variable is the preference for increasing spending to protect the environment (scored 1) versus decreasing spending or keeping spending the same (scored 0). Standard errors are in parentheses. Policy-specific information consists of knowledge that environmental efforts declined during the Reagan administration. Log-likelihood = −929.5, chi-square = 233.8, $p < .0001$, $n = 1,597$.

decrease defense spending: 1%; [2]: 2%; [3]: 4%; [4]: 14%; [5]: 23%; [6]: 24%; [7] greatly increase defense spending: 12%; don't know: 20%)

V316: Where would you place the Democratic Party (on this scale)? ([1] greatly decrease defense spending: 5%; [2]: 11%; [3]: 18%; [4]: 24%; [5]: 12%; [6]: 5%; [7] greatly increase defense spending: 2%; don't know: 22%)

V328: Some people feel the government in Washington should see to it that every person has a job and a good standard of living. Others think the government should just let each person get ahead on his/her own. Where would you place the Republican Party (on this scale)? ([1] government see to job and good standard of living: 1%; [2]: 2%; [3]: 4%; [4]: 15%; [5]: 18%; [6]:

18%; [7] government let each person get ahead: 10%; don't know: 17%; haven't thought much about it: 15%)

V329: Where would you place the Democratic Party (on this scale)? ([1] government see to job and good standard of living: 5%; [2]: 12%; [3]: 18%; [4]: 18%; [5]: 7%; [6]: 4%; [7] government let each person get ahead: 2%; don't know: 19%; haven't thought much about it: 15%)

Calculating Imputed Preferences

To clarify the analytic procedure used to produce the imputed preferences reported in tables 2–5, I illustrate the logic

of these calculations with an example of a single hypothetical respondent and a single model of policy preferences (environmental spending). As described in the text, the model used to impute fully informed preferences contains measures of general political knowledge, policy-specific information (in this case, whether federal environmental efforts declined during the Reagan years), a vector of control variables, interactions between each control variable and general knowledge, interactions between each control variable and policy-specific information, and the interaction between general knowledge and policy-specific information. The coefficients from this model, estimated with logistic regression, are shown in Table A-1 (all variables are rescored to a 0–1 scale). Note that, like any model with interaction terms, the main effects represent not some kind of average effect but the conditional effect of a given predictor for a respondent with a score of 0 on both general knowledge and policy-specific information.

To calculate imputed environmental spending preferences for the respondent (R) using these coefficients, R 's scores on each of the predictors are multiplied by the coefficient for that predictor. These products are then summed along with the constant term to produce the estimated "logit" or "log-odds" of R scoring 1 on the dependent variable (in this case, of holding a preference for increased environmental spending). Finally, the resulting logit is converted into the predicted probability of R preferring increased environmental spending as follows:

$$P(Y = 1) = \frac{e^{\text{logit}}}{1 + e^{\text{logit}}}$$

This entire process is repeated for each respondent, and the resulting probabilities are averaged to produce the imputed aggregate preferences reported in tables 2–5. By substituting alternative scores on the two information measures (i.e., general knowledge and policy-specific information), and their respective interaction terms, imputed preferences can be calculated for any combination of general and policy-specific information.

For example, to compute the estimated probability that R would favor increased environmental spending if fully informed in terms of both general and policy-specific knowledge, one would substitute a value of 1 in place of R 's observed scores on both the general and policy-specific measures. To compute the analogous probability if R were at the 35th percentile of general knowledge but informed about the relevant policy-specific fact, one would substitute a value of .35 for R 's general knowledge score and 1 for the policy-specific knowledge score. These substitutions would also affect R 's scores on the interaction terms, since the scores on the interaction variables are calculated by multiplying a respondent's information scores by his or her scores on each of the control variables. For example, a 37-year-old respondent would score .26 on the 0 to 1 age variable. If R were 37 years old, the imputed score for the interaction between age and general knowledge at the 35th percentile would be $.26 \times .35 = .091$, and the imputed score for the interaction between age and policy-specific knowledge would be $.26 \times 1.0 = .26$.

Based on the coefficients shown in Table A-1, R 's predicted logit under the hypothetical condition of being at the 35th percentile of general knowledge (general information score = .35) and aware that environmental efforts had declined (policy-specific information score = 1.0) would be the sum of the products shown in Table A-2 plus the constant term.

For each respondent, then, any specific pair of imputed

TABLE A-2. Calculating an Individual Respondent's Imputed Policy Preference at the 35th Percentile of General Information and Full Policy-Specific Information

	Coefficient		Value		Product
General information	2.390	×	.35	=	.837
Policy-specific information	1.844	×	1.00	=	1.844
Age	−1.257	×	.26	=	−.327
All other control variables
General information × age interaction	2.210	×	.35 × .26	=	.201
All other general information × control interactions
Policy-specific information × age interaction	1.277	×	1.00 × .26	=	.332
All other policy-specific information × control interactions
General by policy-specific interaction	3.119	×	.35 × 1.0	=	1.092

general and policy-specific information scores produces a set of imputed scores for the interaction terms. All these scores are then substituted into the model of policy preferences as described above, the resulting logits are converted into probabilities, and the probabilities are averaged to produce the imputed aggregate preferences of interest.

Standard Errors

Note that the large number of interaction terms in these equations leads to high standard errors for the logit coefficients, a result reported by Althaus (1998) and Bartels (1996) as well. Because the nonsignificant predictors are theoretically relevant, and to parallel more closely the approach of earlier research, I retain them in most models. When sample size is small, however (the nonexperimental analysis of opposition to foreign aid spending and the experimental analysis of support for prison construction), I exclude those sets of predictors for which neither the main effect nor either interaction effect produces coefficients that exceed their standard errors. This helps conserve degrees of freedom in these analyses and has a very minimal effect on the estimated coefficients.

The bootstrapped standard errors reported in tables 2–5 are estimated as follows. For each logistic analysis, 100 different samples of observations are drawn with replacement from the set of cases available for that analysis, and each of these samples has the same sample size as the original set of cases. From each of these samples, a complete analysis is

conducted that produces logit coefficients and then the projected policy preferences under the various information conditions identified in tables 2–5. The bootstrapped standard error for a particular projected policy preference is simply the standard deviation of the estimates from the 100 different samples. (For a more detailed discussion of the bootstrap and related techniques, see Efron and Tibshirani 1986; Mooney and Duval 1993.)

Note that the standard error for the difference between two information conditions (e.g., observed and fully informed) can be smaller than the standard errors for either or both of the two information conditions themselves. This simply reflects the fact that the variance of the quantity $(X \text{ minus } Y)$ is equal to the variance of X plus the variance of Y minus twice the covariance of X and Y .

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