DIVISION OF THE HUMANITIES AND SOCIAL SCIENCES
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CALIFORNIA 91125

SURVEY MEASURES OF UNCERTAINTY: A REPORT TO THE NATIONAL ELECTION STUDIES BOARD ON THE USE OF "CERTAINTY" QUESTIONS TO MEASURE UNCERTAINTY ABOUT CANDIDATE TRAITS AND ISSUE POSITIONS

R. Michael Alvarez

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Survey Measures of Uncertainty: A Report to the National Election Studies Board on the Use of "Certainty" Questions to Measure Uncertainty About Candidate Traits and Issue Positions

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1 Introduction

There is little doubt that citizens face an uncertain political world. It is difficult to make predictions about the future and about the possible behavior of politicians in future situations (Downs 1957). Candidates and public figures often have incentives to present ambiguous or vague information to the public (Shepsle 1972; Page 1978). Last, the mass media presents political information to the public in short "spots", which often focus more on the "horserace" than on substantive politics (Patterson 1980).

A great deal of attention has been paid to the role of imperfect or incomplete information in the formal literature on candidate competition and elections. But the empirical literature on campaigns and elections has largely ignored the prevalence of uncertain information in models of political behavior; the only mention which is made in the empirical literature of imperfect information are the multitude of articles which discuss "nonattitudes" or cognitive limits of citizens.

Instead of examining imperfect information as a way to understand political behavior in American politics, the empirical literature has tended to see citizens as politically sophisticated or not. Thinking of citizens as informed or not might be misleading if there are an important number of citizens who fall between these poles, who are more or less informed about political issues. If these more or less informed citizens have different perceptions, responses to survey questions, or behave differently than perfectly informed (or absolutely uninformed) citizens, a critical component of political behavior is missing from the existing literature.

Some recent work has begun to examine the empirical significance of uncertain information in American political behavior (Aldrich et al. 1982; Alvarez 1996; Alvarez and Brehm 1995, 1996; Alvarez and Franklin 1994; Bartels 1986; Brady and Ansolabehere

1989; Franklin 91). But there is no real consensus in this expanding literature about the appropriate strategies for measuring uncertainty (Alvarez 1996).

In general, two measurement strategies have been used. Either researchers have used indirect means to measure uncertainty (by developing indirect indicators from other survey questions [Alvarez 1996] or by using statistical models which estimate uncertainty [Bartels 1986; Franklin 1991]) or they have directly asked survey respondents questions designed to reveal their subjective uncertainty (Alvarez and Franklin 1991). The indirect measures of uncertainty suffer because researchers must make strict and problematic assumptions about their statistical models used to estimate uncertainty (Alvarez 1996).

In previous work, Franklin and I (1994) have developed and examined a series of survey questions which probe a respondent's uncertainty about their own position and the positions of various political figures on standard sevenpoint issue scales. These "certainty" questions about issue placements have been examined in two surveys we conducted in 1991 and 1992, and they were included in the 1993 NES Pilot and the 1994 NES Election Study. Our conclusions were that these certainty survey questions appear to be valid measures of uncertainty, and that they produced new insights about the political perceptions of Americans and how they respond to survey questions.

But all of the previous research in this area has been narrowly focused on issue perceptions, in particular, those commonly measured by sevenpoint scales. To generalize this research, I proposed that the NES include "certainty" measures in the 1995 NES Pilot Study which would measure the uncertainty of respondents about their perceptions of candidate traits. I also proposed that "certainty" measures be used with non sevenpoint scale issue questions. Both types of certainty measures were included in the 1995 NES Pilot Study, and in the remainder of this paper I discuss preliminary results about the properties of these survey questions.

This paper is organized into two sections. In the first, I discuss briefly the "certainty" questions included in the 1995 NES Pilot. Here I present some preliminary evidence about the simple performance of these survey questions focusing on discussing the response patterns and measurement validity. The second section turns to another important issue concerning these new survey measures - what new answers they provide about important questions like our understanding of how people evaluate political figures, how individuals respond to survey questions, and why past research has not found widespread evidence for attitude stability over time. I argue that these "certainty" questions may provide new answers for these lasting research questions.

2 Validity of the Certainty Questions

In the 1995 NES Pilot Study certainty questions were asked for both candidate traits and for issue opinions on branching format questions about environmental policy. Both types of certainty question had the same format. Following the substantive question about

two aspects of Clinton and Dole's characters (whether they provide strong leadership, or can be described as moral) respondents were asked "How certain are you about this? Very certain, pretty certain. or not very certain?" The wording of the environmental opinion question was slightly different. Following a branching format question asking for the respondent's position, and that of Clinton and their two Senators on environmental regulation, respondents were asked "How certain are you of your/Clinton's/Senator 1's/Senator 2's position on this? Very certain, pretty certain, or not very certain?"[1]

The first concern with these two sets of certainty questions is the patterns of survey response across individuals in this survey. In Table 1 I give the marginal frequencies for the four candidate trait certainty questions. In the top panel of Table 1 are the responses for Clinton (Provides strong leadership and Moral) and for Dole (Provides strong leadership and Moral).

Table 1 Goes Here

First, notice that respondents do not seem overly confused by these candidate trait certainty questions. Across the two candidates and the two traits, the levels of question nonresponse are extremely low, with a maximum of three respondents saying they did not know how certain they were of whether Clinton provided strong leadership. So, of the respondents who answered each of these trait questions, virtually all were able give their subjective certainty of their opinion about each candidate's traits.

Second, there are some slight differences of substantive interest in Table 1. Respondents were more certain of Clinton's provision of strong leadership than they were of whether the word "moral" described his character; but the pattern is reversed for Dole, with respon dents being more certain about whether "moral" described Dole than his provision of strong leadership. Perhaps Clinton's incumbency as president has raised public awareness of his leadership skills, while repeated attacks on "scandals" like Whitewater and the White House travel office have clarified to individuals his morality. For Dole, greater ambiguity about his leadership strength might arise from his less visible position as Senate Majority leader. In any case. these intriguing patterns deserve additional analysis.

Third, there is a sharp contrast between the responses to the candidate trait certainty questions and the responses Franklin and I observed in our previous analysis of certainty questions asked after sevenpoint issue scales. In our previous work. we found that vast majorities of survey respondents (usually over 75%) were "pretty" or "not very" certain of their sevenpoint placements of political figures on various issue and ideology questions

[1]The branching format issue question first asked respondents the following question. "Some people think we need much tougher government regulation on business in order to protect the environment. Others think that regulations to protect the environment are too much of a burden on business. What do you think– do we need tougher environmental regulations even if it hurts business?" After responding yes or no to that question. respondents were asked a followup question: "Do you feel that way strongly or not so strongly?" After determining the strength of their opinion, respondents were asked their certainty of the opinion."

(1994: Table 1, p. 675). Here, respondents are more certain of their assessments of candidate traits, with greater proportions of respondents who said they were "very certain" of their trait opinions on all four questions (an average of 29.8% of respondents in Table 1 said they were "very certain" of their trait opinions of these two political figures, in contrast, an average of 18.4% of respondents said they were "very certain" of placements of Senators on three different issues in our previous study).

In Table 2 I present the survey frequencies for the responses to the environmental opinion certainty question. This table gives the certainty responses for the respondent's own opinion, and for their opinions where Clinton and their two Senators fall on the issue of environmental regulation. Again, notice the extremely low incidence of item nonresponse in these certainty questions. Fewer than three respondents could not answer the certainty questions, after giving their opinions on each branchingformat issue questions. This provides additional confirmation that the certainty questions do not appear to be so confusing or difficult to comprehend that survey respondents cannot answer them.

Table 2 Goes Here

Second, 45% of respondents reported being "very certain" of their own opinions on environmental regulation and only 8 said they were "not very certain" of their own opinions. But the tables turn when respondents are asked about the certainty of their opinions about Clinton and their two Senators. Few respondents (approximately 10%) are certain of their environmental stance of these political figures, while many more (between 25% and 30%) are not very certain of the stances of these same political figures. This reproduces the result Franklin and I found in our earlier study (1995, p. 675).

Third, the contrast between issue certainty and trait certainty is apparent in Table 2. Again, few respondents claim to be certain of the environmental stance of Clinton and their two Senators, but almost three times more respondents feel certain of Clinton and Dole's traits. This points to a very important substantive result, with numerous implications for campaigning and representation. Why is it that people seem more confident in their assessments of traits than issue stances of elected officials? Is this due to the cognitive strategies of the public? Is it due to how contemporary electoral campaigns are run? Or is more a general statement about the rise of candidatecentered politics?

Next I show that the responses provided by individuals to both the traits and branching format issue certainty questions vary across respondents in predictable manners. By showing that the certainty responses can be predicted by variables which measure an individual's store of political information and their costs of information, I demonstrate that these survey questions do tap into the factors they are designed to measure.

I use six variables as measures which ought to predict responses to these certainty questions (Alvarez 1996; Alvarez and Franklin 1994). First, to account for the flow of information to which the respondent is presented, I construct a variable for the number of days a respondent reports watching television news ("Watches News"). Second, to measure information costs, I use variables for the respondent's race, gender, educational

attainment and partisan affiliation ("Race", "Gender", "Education" and "Party Id."). Third, I measure the respondent's store of political information by coding a factual information scale ("Chronic Information"). 2 Since the certainty responses are categorical and ordinal, I use ordered probit to estimate these validation models.

The ordered probit results for the four trait certainty questions are in Table 3 and for the four environmental issues questions in Table 4. The four dependent variables all retain their original coding, which means that a low value for trait certainty indicates a certain respondent while a high value indicates an uncertain respondent. Thus, the expectations for the independent variables are clear; as information costs increase, uncertainty should increase (positive signs); and as exposure to political information and a greater store of factual information increase, uncertainty should decrease (negative signs).[2]

Table 3 and 4 Go Here

In Table 3 most of the signs are in the expected directions, and many are statistically significant. In particular, notice that a greater store of political information, higher educational attainment, and more exposure to political information all produce less uncertainty in respondents trait assessments. The respondent's gender has a significant negative effect in three models, implying that women are more uncertain of trait assessments than men. Surprisingly, minorities seem less uncertain about trait assessments than whites, significantly so in the two Dole models. And Republican identifiers are less uncertain of Clinton and Dole's traits than Democrats.

The results in Table 4 are less clear. Here, the general patterns of coefficients are similar to those in Table 3, with exposure to information, a store of factual political information, and gender all having similar signs between the two tables. Fewer of these coefficients are statistically significant, however. The cause of this weak performance by the independent variables in Table 4 is unclear: it is possible that the certainty questions following the branching format issue opinion questions are not as appropriate measures of certainty as certainty questions following sevenpoint issue scales or trait questions. Since the certainty questions in Table 4 follow two separate questions (one aimed at ascertaining a binary yes or no response to a policy question, the second aimed at measuring the strength of the first response), it may not be clear to the respondents that the certainty question is meant to determine the overall certainty of their opinion, not just their certainty about the *strength* of that opinion. Also, it is possible that these models in Table 4 are under specified. In previous work, contextual variables (attributes of the political figures like their institutional positions and their ideology and partisan affiliation) often were important predictors of certainty about the issue stances of political

[2] "Watches News" is taken from V126, with missing data deleted. "Race" is from V1435, and is a dummy variable for blacks (1) relative to all other racial backgrounds. "Gender" is from V1434, with females coded 1. "Education" is from V1209, and is recoded into a four category scale measuring educational attainment short of a high school diploma, high school diplomas, posthigh school training, and college diploma or greater. "Party Identification" is measured with the partisanship scale, V2263a. "Political Information" is measured from V1006, V1007, V1008, and V1009. Respondents were given one point for each of those questions they answered correctly.

figures (Alvarez 1996; Alvarez and Franklin 1994).

One additional point about the validity of both certainty measures can be addressed with the 1995 NES Pilot data. This issue concerns whether certainty questions measure the uncertainty a respondent has about a particular issue and political object, or whether certainty questions are measuring the general ambiguity a respondents has about politics. To examine this I give in Table 5 the correlation matrix for all of the eight certainty questions from the 1995 NES Pilot Study.

Table 5 Goes Here

The correlation coefficients in Table 5 provide clear evidence that the certainty measures *are not measuring general ambiguity of respondents about politics.* The correlations between the certainty questions about similar political issues and objects are, with only one exception, relatively low. In the candidate trait certainty questions, the highest correlations are between Dole's traits (.60) and Clinton's traits (.42). The correlations among the environmental regulation certainty questions are smaller, with the greatest being between the two Senators (.50). But the correlations between the trait certainty responses and the environmental issue certainty responses are quite modest, with the greatest correlation being that between the second Senator's environmental regulation certainty and Clinton's leadership traits (.35). In general, though, the correlations in Table 5 are quite modest, and should cast doubt on the idea that certainty measures are no different than general measures of a respondent's store of political information.

In conclusion, this section has established the validity of the certainty questions in the 1995 NES Pilot Study. From a simple examination of the response marginal frequencies, to the more complex validation models, and last to the correlations among the certainty responses, the results indicated strong support for the validity of the candidate trait certainty questions. Those certainty questions invoke little item nonresponse, they are predicted by measures of information cost and exposure to political information, and last, they demonstrate substantive results of potential importance. However, while the certainty measures for the branchingformat environmental issue opinions do not provoke many respondents to not answer the questions, the results from the validation models were not as supportive as the trait certainty questions.

3 Certainty and Political Perceptions

In previous work, Franklin and I have shown that issue certainty measures shed important light on questions about the survey response and how the public evaluates political figures. In this section I replicate those results with both the trait certainty and the branching-format issue certainty questions from the 1995 NES Pilot Study. I show in this section that the results in our earlier analysis (Alvarez and Franklin 1994) are not confined to certainty about sevenpoint issue placements, but seem to be more general phenomena. That is, certainty measures about candidate traits produce new evidence about how

people respond to surveys, about how they evaluate political figures, and about attitude stability.

3.1 Certainty and the Survey Response

First, in Tables 6 and 7 I present simple crosstabulations of responses to the trait or issue question by the respondent's own reported certainty. In our previous work, Franklin and I found a statistically significant tendency for uncertain respondents to place themselves and political figures at the middle of the sevenpoint scales while certain individuals tended to place themselves and political figures towards the extremes. Thus, I expect to find the same pattern in the responses to the trait and branchingformat issue questions– uncertain individuals should give responses clustered in the middle categories, while certain individuals should give responses at the extremes.

Tables 6 and 7 Go Here

Both Tables provide dramatic, and statistically significant, confirmation of our past results. For the candidate trait responses, at least 80% of the not very certain respondents give candidate trait evaluations in the middle two categories. But certain respondents are much more likely to give responses at the polar categories for each trait measure.3 The significant X2 value for each cross tabulation indicate that certain and uncertain individuals have distinct response distributions.

Very similar results are seen in Table 7. Almost 90% of those uncertain about their own opinion on environmental regulation give responses in the middle categories while 95% of those certain of their own opinions give responses in the extreme categories.

Next, for Clinton, 70% of those uncertain about his stance on environmental regulation place Clinton in the middle, while 66certain individuals say (probably accurately) that Clinton is in strongly in favor of tougher environmental control by the government. The same pattern is again seen for the two Senators.

It is important to insure that these response patterns are robust to other control variables. In our earlier work, we found that the individual's response to the certainty question was a better predictor of whether they gave a response to the previous question in the middle than education, political information, and contextual information about the political figure. Here I estimated binary probit models for whether the individual gave a response in the two middle categories (coded 1) or the two extreme categories (coded 0). I include control variables for political information and education.4 The results for these probit models are in Tables 8 and 9.[3]

Tables 8 and 9 Go Here

[3] An interesting substantive result can be observed for the two Clinton trait measures. There, notice that about 45% of the very certain respondents said that neither provides strong leadership nor moral describe Clinton at all!

In each of the eight models, the individual's certainty is a statistically significant and positive predictor of the probability that they gave a middle response. The more uncertain they were, the more likely they were to give a middle category response, controlling for information and education. This is clear confirmation that the observed patterns in Tables 6 and 7 are not statistical artifacts.

Therefore, these results from the 1995 NES Pilot Study demonstrate that certainty plays an important role in determining how individuals answer not only sevenpoint issue scales, but also branchingformat issue scales and candidate trait evaluations. This strongly implies that the relationship between certainty and survey response is a general process which deserves closer examination.

3.2 Certainty and Candidate Evaluations

But certainty also has important substantive implications for how people evaluate political figures (Alvarez 1996; Alvarez and Franklin 1994; Bartels 1986; Franklin 1991). Not only are people much less likely to support and to vote for candidates they are uncertain about, they also have difficulty using uncertain information in their evaluations of candidates (Alvarez 1996). The candidate trait certainty questions in the 1995 NES Pilot Study provide a vehicle to show that uncertain information weighted less by individuals when asked to evaluate political figures.[4]

I followed our earlier example (Alvarez and Franklin 1994) and estimated simple regression models where the individual's rating of Clinton or Dole on the 100point "feeling thermometers" were the dependent variable. On the right hand side of these regression models I included measures of party identification, respondent ideology, and one of the candidate trait assessments. I estimated each model for the full sample of survey respondents, and then for the sample stratified by their response to the particular certainty question. The results of these regression models are in Table 10 (Clinton Evaluations and Strong Leadership), 11 (Clinton Evaluations and Moral), 12 (Dole Evaluations and Strong Leadership), and 13 (Dole Evaluations and Moral).

Tables 10 - 13 Go Here

Beginning with Table 10, the first column gives the regression results for the full sample. This regression model has a reasonable fit to the data, with an adjustedR2 of .59. Notice also that the model estimates that a 1 point change in the individual's assessment of Clinton's strong leadership traits leads to a 16 point change in their thermometer rating of Clinton. In the second column are the estimates for the same model, but only for the individuals who said they were very certain of their assessment of Clinton's strong leadership traits. Here the model fits the data much better (adjustedR2 of .74). Also, the estimated effect of the individual's assessment of Clinton's strong leadership skills has increased dramatically: now a 1 point change leads to almost a 24 point change in

[4]These two control variables are measured as discussed above.

their thermometer rating of Clinton. Last, for certain individuals, note that the impact of party identification on their general evaluation of Clinton is considerable lower than for the full sample.

But compare the estimates in the second and fourth columns of Table 10. The regression model for uncertain individuals poorly fits the data (adjustedR2 of .03). The estimated effect of the uncertain individual's assessment of Clinton's strong leadership traits is now statistically insignificant, and implies that a 1 point change in the individual's assessment of Clinton's strong leadership traits leads to only about a 2 point change in their feeling thermometer evaluation of Clinton. Further, notice that the estimated effect of party identification in this model is greater than it was in the certain respondent model. These same results are replicated in Tables 11, 12 and 13. In each of these tables, a vast amount of heterogeneity is apparent in the estimated effects of each of the candidate trait measures. In each model, the effect of a particular candidate trait for a certain respondent is at least twice the magnitude of the effect of the same trait for an uncertain respondent.

In all, the substantive importance of certainty is clear–people use information they are certain about in their evaluations of political figures. But the methodological implication is also clear. There is significant heterogeneity between individuals in how they evaluate candidates; one of the important contributions of these certainty questions is that they allow for empirical examination of this heterogeneity.

3.3 Certainty and Attitude Stability

One additional place where certainty questions can shed light on important substantive questions is in the stability of political attitudes. It has been long assumed in the public opinion literature that people should have attitudes which are temporally stable; when asked in a panel study, for example, the common expectation has been that an individual should give the same response over repeated interviews (Achen 1975, 1983; Converse 1964; Erikson 1979; Feldman 1989).

On the other hand, it might be the case that some individuals have more certain, and hence more temporally stable, attitudes than other individuals. One theoretical model which shows the relationship between attitude certainty and stability is a Bayesian learning model (Achen 1992; Alvarez 1996; Bartels 1993). In a Bayesian framework, attitudes are represented mathematically as a weighted function of past beliefs and new information, with the weights giving how certain the individual is of new and old information. One critical result from such a model is that if an individual has very certain opinions, new information, no matter how clear, will be unlikely to change that individual's opinion (Alvarez 1996). For individuals with very uncertain opinions, though, new information has a very strong influence on their opinions, and hence their opinions can be easily changed by the new information.

This leads to a key prediction which the 1995 NES Pilot Study data can test. For, respondents in the 1995 Pilot were people who were interviewed in the main 1994 NES study. Respondents in both studies were asked their assessments of Clinton's leadership and moral traits. In Table 14 I present correlations between the 1993 and 1994 Clinton trait responses, first for the full sample, and then for the sample stratified by certainty.

Table 14 Goes Here

The first row of Table 14 gives the temporal correlations for the full sample. In line with findings in the literature, these correlations are not exceptionally strong. The correlation between responses from 1994 to 1995 is only .34 for Clinton's strong leadership traits and .31 for Clinton's moral traits. Thus, simply looking at the correlations for the full sample, one might conclude that beliefs about Clinton's traits are not overwhelmingly stable over time.

But this conclusion is clearly undermined when the remaining columns of Table 14 are considered. Among certain respondents, the correlations over time are quite high, and are almost twice what they were for the full sample. For uncertain individuals, though , the correlations are extremely low (.09 for strong leadership and .19 for moral). That these correlations for uncertain individuals are three to five times lower what they are for certain individuals clearly confirms the prediction from a simple Bayesian learning model that the beliefs of certain individuals are harder to change (and hence more stable over time) than for uncertain individuals. These results also show another way in which these certainty questions shed new light on important substantive problems.

4 Conclusion

This paper has focused on two new types of survey question designed to measure the certainty of individual responses to candidate trait questions and to branchingformat issue opinion questions. I demonstrated that these new survey questions seem to be valid survey measures of certainty. First, the survey marginals show little evidence that respondents have difficulty comprehending these questions. There is little item nonresponse, and the response marginals display patterns which are quite understandable. Second, I showed that the certainty measures are predicted by variables measuring the costs of political information, exposure to political news coverage, and the respondent's store of political information. The validation models performed better for the candidate traits certainty questions than for the branching format environmental certainty questions; the exact cause for this difference most likely lies in model misspecification or ambiguity in the branchingformat survey question structure. Last, I showed that the certainty items are not highly correlated amongst themselves, which indicates that they are not just new measures of general political information.

Of equal importance, though, I demonstrated that these certainty questions shed new light on important questions in the literature. I showed that certainty, as measured by

these new survey questions, influences how people answer survey questions. The evidence presented again shows that certain and uncertain respondents answer survey questions in different manners. Second, I examined how the certainty questions show how individuals use political information in their evaluations of political figures–they weight uncertain information less than certain information. Last, I demonstrated that attitudinal stability is another area where the certainty questions might answer lingering questions, since certain respondents have more stable attitudes than uncertain individuals. Also, important similarities and differences were discussed between these two certainty measures and certainty measures focused on sevenpoint issue scales. Substantively, people seem more certain about their evaluations of candidate traits than issue positions. But methodologically, these three questions perform in many of the same ways. This implies that certainty is not a question important only for understanding perceptions of issue positions –it is a more general phenomenon, and as such, deserves continued research.

Last, this whole paper is premised on the assertion that uncertainty is an intrinsic aspect of the political world. That the political world is uncertain should be obvious, since I have shown that substantial numbers of survey respondents will admit to being uncertain about their beliefs. Citizens must make decisions with uncertain information; until measures of uncertainty are developed, however, our empirical understanding of how imperfect information factors into political perceptions and behavior will be limited. With these surveybased measures of uncertainty, empirical researchers can examine old questions in new ways, and thereby better understand political behavior.

Table 1: Respondent Certainty for Two Candidate Traits

Response to Clinton Trait Certainty Question

	Provides Strong Leadership		Moral	
Response	N	%	N	&
Very	162	33.3	153	31.5
Pretty	263	54.1	255	52.5
Not Very	55	11.3	57	11.7
DK	3	.62	2	.41
NA	0	0	0	0
INAP	3	.62	19	3.9

Response to Dole Trait Certainty Question

	Provides Strong Leadership		Moral	
Response	N	%	N	&
Very	111	22.8	101	31.5
Pretty	260	53.5	253	52.5
Not Very	74	15.2	73	15.0
DK	1	.21	0	0
NA	1	.21	0	0
INAP	39	8.0	59	12.1

Table 2: Respondent Certainty for Opinions on Environmental Regulation

Response to Certainty Question

	Self		Clinton		Senator 1		Senator 2	
Response	N	%	N	&	N	%	N	%
Very	219	45.1	51	10.5	63	13.0	49	10.1
Pretty	214	44.0	182	37.5	161	33.1	158	32.5
Not Very	38	7.8	147	30.3	137	28.2	121	24.9
DK	0	0	3	.62	3	.62	0	0
NA	0	0	1	.21	0	0	0	0
INAP	15	3.1	102	21.0	122	25.1	158	32.5

Table 3: Ordered Probit Models of Trait Certainty

Independent Variables	Clinton Leadership	Clinton Moral	Dole Leadership	Dole Moral
Watches News	-.03	-.02	-.04*	-.08**
	.02	.02	.02	.02
Race	-.03	-.0002	-.13**	-.12**
	.06	.06	.06	.07
Gender	.35**	.30**	.26**	-.002
	.11	.11	.11	.11
Education	-.04	-.06	-.10*	-.16**
	.06	.06	.06	.06
Chronic	-.09**	.02	-.13**	-.03
Information	.05	.05	.06	.06
Party Id.	-.10**	-.09**	-.01	-.08**
	.03	.03	.03	.03
μ_1	-.94**	-.78**		-1.8**
	.20	.20		.23
μ_2	.77**	.88**		-.04
	.20	.20		.21
N	469	454	435	419
LLR	39.8**	23.7**	29.0**	32.6**

Note: * denotes estimates significant at p=.10 and ** significant at p=.05. both two-tailed tests.

Table 4: Ordered Probit Models of Environmental Opinion Certainty

Independent Variables	Self	Clinton	Senator 1	Senator 2
Watches News	.06**	-.04*	-.04*	-.06**
	.02	.02	.03	.03
Race	.02	-.02	-.03	-.07
	.06	.06	.05	.06
Gender	.33**	.12	.27**	.32**
	.11	.12	.12	.13
Education	.05	.08	.14**	.09*
	.06	.07	.07	.07
Chronic	-.05	-.05	.05	-.09*
Information	.06	.06	.06	.06
Party Id.	.07**	.03		
	.033	.03		
μ_1	.62**	-1.1**	-.67**	-1.2**
	.21	.23	.22	.24
μ_2	2.2**	.32*	.60**	.21**
	.22	.22	.22	.23
N	460	371	356	324
LLR	22.3**	6.78	12.8**	17.0**

Note: * denotes estimates significant at p=.10 and ** significant at p=.05, both two-tailed tests.

Table 5: Response Patterns to Trait Scales: Perceived Traits by Certainty

Position	Very Certain	Pretty Certain	Not Very Certain
Clinton: Strong Leadership			
1 (Ex. Well)	5.6	3.4	1.8
2 (Quite Well)	15.4	34.6	47.3
3 (Not Too Well)	34.6	47.9	45.5
4 (Not At All)	44.4	14.1	5.5
χ^2			73.3*
N	162	263	55
Clinton: Moral			
1 (Ex. Well)	8.5	2.7	1.8
2 (Quite Well)	20.3	36.9	40.4
3 (Not Too Well)	25.5	46.3	50.9
4 (Not At All)	45.8	14.1	7.0
χ^2			78.2*
N	153	255	57
Dole: Strong Leadership			
1 (Ex. Well)	17.1	6.2	2.7
2 (Quite Well)	34.2	61.5	46.0
3 (Not Too Well)	28.8	26.5	39.2
4 (Not At All)	19.8	5.8	12.2
χ^2			45.7*
N	111	260	74
Dole: Moral			
1 (Ex. Well)	30.7	9.5	2.7
2 (Quite Well)	26.7	71.2	50.7
3 (Not Too Well)	20.8	15.4	37.0
4 (Not At All)	21.8	4.0	9.6
χ^2			95.4*
N	101	253	73

Note: * denotes χ^2 significant at the p=.05 level.

Table 6: Response Patterns to Branching-Format Scales: Perceived Positions of Political Objects by Certainty

Position on Govt Env. Regulation	Very Certain	Pretty Certain	Not Very Certain
Self			
1 (Tougher-Strongly)	67.9	43.5	7.9
2 (Tougher-Not Strongly)	3.2	22.0	50.0
4 (Burden-Not Strongly)	1.8	13.6	39.5
5 (Burden-Strongly)	27.1	21.0	2.6
χ^2			142.0*
N	218	214	38
Clinton			
1 (Tougher-Strongly)	66.0	43.7	23.2
2 (Tougher-Not Strongly)	6	27.6	37.3
4 (Burden-Not Strongly)	14	13.8	33.1
5 (Burden-Strongly)	14	14.9	6.3
χ^2			53.1*
N	50	181	142
Senator 1			
1 (Tougher-Strongly)	57.1	47.2	22.2
2 (Tougher-Not Strongly)	3.2	15.5	29.4
4 (Burden-Not Strongly)	7.9	14.3	33.3
5 (Burden-Strongly)	31.8	23.0	15.1
χ^2			57.7*
N	63	161	126
Senator 2			
1 (Tougher-Strongly)	53.1	42.4	16.4
2 (Tougher-Not Strongly)	4.1	14.0	32.8
4 (Burden-Not Strongly)	6.1	19.0	39.7
5 (Burden-Strongly)	36.7	24.7	11.2
χ^2			69.2*
N	49	158	116

Note: * denotes χ^2 significant at the p=.05 level.

Table 7: Probit Models of Middle Category Traits Responses

	Clinton		Dole	
Ind. Variables	Leadership	Traits	Leadership	Traits
Constant	-.71**	-.92**	-.45*	-.46*
	.25	.26	.29	.29
Certainty	.81**	.91**	.52**	.74**
	.11	.11	.11	.12
Chronic	-.07	-.16**	.04	-.04
Information	.06	.07	.07	.07
Education	.04	.13**	.17**	-.03
	.07	.08	.08	.08
N	472	458	439	421
LLR	62.2**	78.2**	25.4**	46.0**

Note: * denotes statistical significance at the p=.10 level and ** denotes significance at the p=.05 level, both two-tailed tests.

Table 8: Probit Models of Middle Category Environmental Opinion Responses

Ind. Variables	Self	Clinton	Senator 1	Senator 2
Constant	-2.8**	-1.3**	-1.8**	-1.9**
	.31	.27	.34	.38
Certainty	.95**	.30**	.57**	.60**
	.13	.07	.13	.14
Chronic	.04	-.04	-.16**	-.14**
Information	.08	.07	.08	.08
Education	.02	.05	-.08	-.06
	.08	.08	.09	.10
N	464	375	356	324
LLR	65.7**	11.7**	26.8*8	27.6**

Note: * denotes statistical significance at the p=.10 level and ** denotes significance at the p=.05 level, both two-tailed tests.

Table 9: Effects of Trait Certainty on Clinton Evaluations

	Clinton Thermometer Evaluations			
	Full Sample	Certain Resp.	Somewhat Resp.	Uncertain Resp.
Constant	124.9**	144.0**	110.0**	72.0**
	4.2	6.0	6.2	16.1
Party Id	-3.8**	-2.6**	-4.2**	-3.0**
	.52	.88	.69	1.6
Ideology	-3.1**	-3.4**	-2.6**	.47
	.75	1.2	1.1	2.2
Strong	-16.1**	-23.6**	-10.8**	-1.6
Leader	1.4	2.2	2.0	4.8
N	331	123	175	31
Adj. R^2	.59	.74	.47	.03

Note: * denotes statistical significance at the p=.10 level and ** denotes significance at the p=.05 level, both two-tailed tests.

Table 10: Effects of Trait Certainty on Clinton Evaluations

	Clinton Thermometer Evaluations			
	Full Sample	Certain Resp.	Somewhat Resp.	Uncertain Resp.
Constant	117.8**	128.8**	106.4**	78.5**
	4.2	6.6	6.4	12.0
Party Id	-4.0**	-3.4**	-3.6**	-4.2**
	.55	1.1	.71	1.2
Ideology	-3.1**	-3.9**	-3.2**	1.0
	.79	1.3	1.1	1.8
Moral	-13.7**	-17.5**	-10.0**	-2.5
	1.4	2.3	2.1	3.7
N	321	123	154	42
Adj. R^2	.56	.69	.42	.19

Note: * denotes statistical significance at the p=.10 level and ** denotes significance at the p=.05 level, both two-tailed tests.

Table 11: Effects of Trait Certainty on Dole Evaluations

	Dole Thermometer Evaluations			
	Full Sample	Certain Resp.	Somewhat Resp.	Uncertain Resp.
Constant	70.3**	75.4**	65.1**	60.4**
	4.8	9.8	6.7	10.2
Party Id	2.8**	4.4**	2.3**	1.7*
	.51	1.3	.62	1.1
Ideology	1.1*	-.08	1.2	3.0**
	.75	1.5	.98	1.7
Strong	-11.8**	-14.7**	-8.9**	-8.7**
Leader	1.3	2.5	2.0	3.3
N	312	80	188	43
Adj. R^2	.34	.52	.21	.21

Note: * denotes statistical significance at the p=.10 level and ** denotes significance at the p=.05 level, both two-tailed tests.

Table 12: Effects of Trait Certainty on Dole Evaluations

	Dole Thermometer Evaluations			
	Full Sample	Certain Resp.	Somewhat Resp.	Uncertain Resp.
Constant	74.8**	68.9**	77.0**	56.3**
	4.9	9.5	7.0	12.6
Party Id	2.5**	4.8**	1.9**	2.1*
	.50	1.1	.63	1.3
Ideology	.63	.000	.22	1.3
	.74	1.5	.98	1.7
Moral	-13.2**	-13.4**	-12.3**	-6.7**
	1.3	2.0	2.3	4.1
N	302	75	183	44
Adj. R^2	.39	.65	.22	.10

Note: * denotes statistical significance at the p=.10 level and ** denotes significance at the p=.05 level, both two-tailed tests.

Table 13: Clinton's Traits, 1994-1995 Stability by Certainty

	Strong Leadership	Moral
Full Sample	.34	.31
Certain	.52	.60
Somewhat Certain	.25	.30
Uncertain	.09	.19

Table 14: Correlations of Trait and Issue Certainty

	Trait Certainty				Issue Certainty			
	Clinton Leader.	Clinton Moral	Dole Leader.	Dole Moral	Self Opinion	Clinton Opinion	Senator 1 Opinion	Senator 2 Opinion
Clinton Leader.	1.0000							
Clinton Moral	0.4234	1.0000						
Dole Leader.	0.3231	0.3708	1.0000					
Dole Moral	0.2425	0.3137	0.6006	1.0000				
Self Opinion	0.1570	0.1464	0.1260	0.0922	1.0000			
Clinton Opinion	0.2452	0.1958	0.2234	0.1843	0.1775	1.0000		
Senator 1 Opinion	0.2212	0.1457	0.2872	0.2567	0.1782	0.3898	1.0000	
Senator 2 Opinion	0.3461	0.1994	0.2197	0.1841	0.1698	0.2721	0.4995	

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