An Analysis of the 1998 NES Mixed-Mode Design

Christina Wessel, Wendy Rahn, and Tom Rudolph

University of Minnesota

The 1998 National Election Study employed a mixed-mode strategy of interviewing respondents in order to determine whether a method can be found which combines the quality of face-to-face interviews with the cost efficiency of telephone interviews. In order to accomplish this goal, interviewers for the 1998 NES first contacted most respondents in person and then arranged to conduct the interview either face-to-face (n=290) or by telephone (n=991).

This mixed-mode strategy was not as successful as hoped both in terms of cost and response rate. The purpose of this analysis is to determine whether this approach also compromised the quality of the data. First, in order to assess the overall quality of the data, we compare the 1998 frequency distributions for key demographic variables with corresponding U.S. Census data, as well as with previous NES results. Then, to assess the consequences of the mixed-mode strategy, we examine whether respondents differ from each other based on the mode of interview. Furthermore, we wish to determine whether the method of interviewing has consequences for the quality of the responses.   For instance, previous studies have found that an emphasis on telephone interviewing can lead to more acquiescence and no-opinion responses. Finally, we examine whether mode of interviewing affected the behavior of standard variables in predicting turnout and vote choice.

Census Comparisons

We began by comparing key demographic variables from the 1998 NES with U.S. Census estimates, as well as with the results from the 1994 and 1990 NES, both of which were also mid-term election years. First of all, in terms of age, the 1998 NES fairly mirrors Census estimates of the population, although it underestimates the number in the 20-29 age group.[1]   However, all age groups are within 3% of Census estimates. Moreover, the 1998 NES more closely approximates Census estimates than either the 1994 or 1990 studies (see Table A).

As in previous NES studies, women are slightly over-represented in the sample. In the 1998 NES, females outnumber males 55% to 45%, whereas Census estimates put women at only 51% of the population. Among both men and women in 1998, the youngest age group is underestimated and the middle-aged are slightly overestimated. However, the discrepancies between NES and Census estimates are no greater, and are often smaller, than in previous NES studies (see Table B).

In terms of race, the 1998 study overestimates the white population by 4% and underestimates the Asian population by 3%. It comes much closer to accurately representing the black and American Indian populations. Unfortunately, these discrepancies are more substantial than in previous NES surveys. Therefore, there is some cause for concern that the 1998 NES over represents white Americans at the expense of minorities, especially Asians (see Table C).

Another clear discrepancy between the 1998 NES and both Census estimates and past studies is in household income.[2] The 1998 NES overestimates those in the under $5,000 bracket by 8% and compensates for this by slightly underestimating those in income categories from $5,000 to $35,000.[3] However, it comes close to approximating Census estimates in most other income categories. Compared to other NES studies, the 1994 study was most successful in matching Census estimates, but the 1998 study is far better than the 1990 study, which severely oversampled households with incomes under $25,000.

When we examine income by race, we find that the 1998 study falls short of estimates for both races in income categories $50,000 and above, but overestimates for the under $5,000 category. However, while the 1998 study has some inaccuracies, it at least is equally inaccurate for both races, while the other studies had differential inaccuracies for the two races (see Table D).

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[1] Unless otherwise noted, the 1998 NES is compared with U.S. Census Bureau population estimates from January 1, 1999, the 1994 NES with Census estimates from July 1, 1994, and the 1990 NES with Census estimates from July 1, 1990.

[2] The 1998 NES household income results are compared with U.S. Census Bureau estimates from March of 1997. Both the 1994 and 1990 NES are compared with Census estimates from March of the same year.

[3] There were some problems with interviewer coding of household income. Apparently, a number of respondents who refused to answer the income question were placed in the lowest income category rather than being coded as missing data.

Thus far, discrepancies between the 1998 study and Census data have not been too dramatic, but this is not the case when we look at education. The 1998 NES significantly overestimates the college educated (by 8%) and consequently significantly underestimates those with only elementary and high school education.[4] This trend is even more pronounced among males than females, where estimates of college educated are 10% greater than in the Census. Furthermore, this overestimation of the college educated is twice as large as in the 1990 NES. Therefore, not only does the 1998 survey systematically oversample the well-educated when compared to Census estimates, this problem is even more pronounced than in previous studies (see Table E).

Therefore, from these preliminary comparisons with Census estimates we find that 1998 respondents were more likely to be poor, white females than the general public. However, of most concern is that the sample is biased in favor of the more highly educated.

Are the telephone and face-to-face respondents equivalent?

In order to determine whether respondents differed from each other based on the mode of the interview, we regressed mode on various demographic variables. We found telephone respondents were younger, better educated, had higher incomes, and were more likely to be employed, female, and a minority. There were no differences in marital status, length of residency, and homeownership (see Table 1). These differences are largely consistent with the findings of Ellis and Krosnick (1999) with the notable exception of minority status, where they found telephone respondents were more likely to be white. They also did not examine employment, residency, and homeownership. In another study of the 1992 NES, Rosenstone, Petrella, and Kinder (1993) also found telephone respondents to be younger, better educated, more affluent, of higher social status, and more likely to be employed than respondents interviewed face-to-face.

Does interview mode affect the levels of variables?

To assess any differences in political characteristics, we used a difference-of-means test to look at a variety of political variables. For instance, in order to determine

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[4] Census estimates of educational attainment were available for 1998, 1994, and 1990, but the months the

the level of political interest, respondents were asked how interested they were in paying attention to political campaigns (v201). Political knowledge is measured by asking respondents to identify the positions Al Gore (v475), William Rehnquist (v476), Boris Yeltsin (v477), and Newt Gingrich (v478) hold, as well as which party had control of the House (v479) and Senate (v480). The 1998 NES includes four measure of trust in government, including whether the respondent thinks those running the government are crooked (v526), whether the government wastes tax money (v527), whether the government can be trusted to do what is right (v528), and whether the government is run for the benefit of all or only a few (v529). These variables are combined into a scale where those with the strongest levels of trust scored highest. The respondents' trust in others was measured by asking them whether they believe most others would try to take advantage of them (v531) and whether they think most others can be trusted (v532). Political efficacy assesses whether respondents believe the government pays attention to people when making decisions (v521), whether elections make the government pay attention (v522), whether public officials care what people think (v524), and whether they feel they have any say in government (v525).

Three different measures were used to assess opinions of President Clinton's performance in office. First, respondents were asked to evaluate how Clinton has handled his job as president (v216, v217). Secondly, they were asked to rate Clinton on a feeling thermometer (v238). Finally, several variables were combined into a measure evaluating their response to the Clinton-Lewinsky scandal. The 1998 NES asked eight questions on the scandal. All these variables were entered into a factor analysis, the results of which are shown in Table 2. After examining these results, the two media variables were dropped and the remaining variables were combined into a single measure.

We found that there were significant differences in vote choice for congressional candidate, turnout in 1996, trust in others, political efficacy, and church attendance. Telephone respondents reported higher trust in others, higher turnout in 1996, greater political efficacy, and more frequent church attendance. On the other hand, those interviewed face-to-face were more likely to vote for a Democratic congressional

estimates were taken was not provided.

candidate. There were no significant differences in vote turnout in 1998, strength of partisanship, political interest, political knowledge, trust in government, party identification, Clinton's job approval, Clinton's feeling thermometer, and opinions on the Clinton-Lewinsky scandal (see Table 3). When demographic differences between the telephone and face-to-face samples are controlled, telephone respondents continue to demonstrate significantly more trust in others, higher levels of church attendance and turnout in 1996, and more Republican preferences in the 1998 Congressional elections. Differences in levels of political efficacy, however, are no longer insignificant (results not shown).

From this analysis it appears that the heavy reliance on telephone interviewing tends to produce a sample that it more socially connected and less Democratic in its vote choices. Rosenstone, Petrella and Kinder (1993) also found telephone respondents to have higher levels of reported vote for Republican congressional candidates, but did not find significant differences between telephone and face-to-face respondents in social trust.

To determine what kind of selection process might lead to these differences, we turned to information about the interview process and interview assessments of the respondents. Persons assigned to telephone mode who were ultimately interviewed exhibited the same rate of initial cooperation as face-to-face respondents (initial refusal rates [v980045] were 13.8 and 14.6% respectively) and reported levels of resistance to the interview (22.7% and 20.8% respectively [v980047]), but not surprisingly, almost one-quarter of telephone respondents (24.3%) compared to only 9% of face-to-face respondents had at least one broken appointment (v980046). The greater difficulty of securing an interview from a respondent assigned to telephone is also indicated by the fact that telephone respondents required additional incentives, with nearly a third of them (32.3%) receiving the higher $30 (10.5%) or $50 dollar respondent payments (20.8%) compared to only 20% of the face-to-face respondents. We also examined the interviewer's assessment of the respondent's level of cooperation, suspicion, interest in the interview, and sincerity. The only significant difference between the two modes was in suspicion, where telephone respondents were rated as being more suspicious than respondents interviewed face-to-face (see Table 4). Therein, we believe, lies part of the

answer to the differences observed by mode in levels of social trust, past turnout behavior, and religious attendance. Given telemarketing and other types of (annoying) telephone solicitation and the growing means people have at their disposal to screen calls (such as answering machines and caller-ID), the people assigned to telephone who eventually wound up being interviewed are precisely those who have more social capital (as indicated by previous voting behavior and social trust) or feel a stronger sense of obligation, as indicated by their higher levels of church attendance (which may also explain their greater propensity to vote for Republican candidates). Those that are not as trusting may choose to screen calls, fail to honor appointments, or hang up the phone, strategies that are either unavailable to respondents assigned to personal interview mode or more difficult to implement when the interviewer is at your doorstep. Response rates to telephone surveys may be yet another indicator of social capital.

The Effects of Survey Mode on Response Quality

Using methods employed by Krosnick & Green (1999), we tried to ascertain whether one mode was more likely to lead to satisficing response bias. We would expect those who were personally interviewed to demonstrate less response bias since they have more time to thoughtfully consider their answers and are more likely to develop a good rapport with the interviewer.

To examine these effects we looked at six questions in the 1998 survey that explicitly gave respondents the opportunity to answer that they have no opinion on a policy issue. We then calculated the percentage of questions that they answered with no opinion. Surprisingly, when this measure is regressed on mode alone, people interviewed face to face were significantly more likely to satisfice by giving no opinion. However, when we control for political interest, political knowledge, and various demographic variables, the mode of the interview looses significance (see table 5). For instance, those with less education, lower income level and the least political knowledge interest were more likely to have no opinion. Furthermore, minorities and women are also less likely to venture an opinion. A curious result is that those who have lived in the same place longer are also more likely to select the no-opinion response. Not surprisingly, marital status, employment, and homeownership are insignificant.

We then measured acquiescence by looking at 13 items where respondents were asked to agree/disagree with a statement. Once again, we calculated the percentage of items they agreed with. When this measure is regressed on mode alone, the method of interview is not significant. Furthermore, when the acquiescence measure is regressed on demographic and political variables, we find once again that more education, higher income, and greater political interest lead to lower levels of acquiescence (see Table 6). Here, however, gender, race, political knowledge, and residency are insignificant, along with employment and homeownership. Age is now significant, although in the opposite direction, with older people more likely to agree with items. Finally, those who are married are also more likely to demonstrate higher levels of acquiescence.

The Effects of Survey Modes on Models of Political Behavior

The mixed-mode strategy of the 1998 National Election Study affords us some unique analytical opportunities. As illustrated earlier, we have seen that survey mode can affect both the quality of data and the distribution of responses. Of particular interest, however, is whether survey mode affects the causal inferences we draw from models of political behavior. In the remainder of this section, we estimate models of voter turnout and vote choice across subsamples of the 1998 NES to determine whether survey mode influences our understanding of individuals' political action and preferences.

<u>Voter Turnout</u>

Consider first the determinants of voter turnout. To provide an empirical benchmark, we have chosen to estimate a slightly modified version of the familiar model reported in Table D-5 of Rosenstone and Hansen (1993). Turnout is modeled as a function of individuals' resources, partisan evaluations, social involvement, demographic characteristics, exposure to mobilization, and electoral context. Table 7 reports the results of this model estimated across three different samples of respondents. Column one presents the results for the entire sample of respondents while columns two and three report the estimates from the face-to-face and phone subsamples respectively.

For the most part, the results based on the full sample of 1998 NES respondents comport well with those obtained by Rosenstone and Hansen (1993). We too find that turnout is positively associated with multiple measures of social involvement. Turnout is

also higher among those with political knowledge, political interest, strength of partisanship, those who care which party wins, those who were contacted by a political party, and those that reported turning out in 1996. Consistent with Rosenstone and Hansen, we find that turnout is lower among the unemployed and those living in Southern or border states. In contrast, we find less support for the effects of electoral context.

Of central interest to the present study are the potential effects of survey mode. Does survey mode alter the qualitative or quantitative conclusions one might draw from a model of voter turnout? The effects of survey mode can be observed by testing the statistical equivalence of the estimates in column two of Table 7 with their corresponding estimates in column three. The p-values listed in column four indicate the level at which the coefficients in columns two and three are statistically different from each other.

While a clear majority of coefficients are not statistically different across survey modes, six of the twenty-one variables yield statistically different coefficients across subsamples. These variables include political knowledge, political interest, care which party wins, social trust, and unopposed House seat. With the exception of political interest, the coefficients for these variables are in the expected direction in both subsamples. We note further that the magnitude of these coefficients is consistently larger in the face-to-face sample than in the phone sample. For example, political knowledge appears to exert a greater influence on turnout among face-to-face respondents than among those interviewed by phone. Similarly, caring about which party wins the election matters more in the face-to-face sample. Lack of partisan competition depresses turnout in the face-to-face sample while it has no effect in the phone sample. In four of the six instances in which coefficients differ across modes, the effects on turnout are more pronounced in the face-to-face sample. In short, the phone sample appears to underestimate the effects of the campaign.[5]

The political behavior of African-Americans also differs depending on mode of interview. Blacks are more likely to vote than whites in the phone sample, but race does not matter in the face-to-face sample. This difference may stem from the fact the

selection process involved in survey compliance recruits respondents from lower status groups who are generally unrepresentative of their groups (Brehm 1993). Given that the phone sample appears in general to disproportionately represent the socially connected and that blacks as a group as less socially connected than whites, the blacks who are in the phone sample are likely to be even more unrepresentative of their group than the blacks in the face-to-face sample.

Vote Choice

We turn now to the determinants of congressional vote choice. Our model is based, in part, on one reported in Table 5.12 of Jacobson (1997). In addition to controlling for incumbency, partisanship, ideology, demographic traits, and attitudes toward the candidates, the model includes measures of individuals' attitudes toward President Clinton and Ken Starr. As shown in Table 8, we estimated this model across the same three samples of respondents.

The results from the full sample, presented in column one, closely mirror those reported by Jacobson (1997). Republicans, conservatives, those who like something about the Republican candidate, and those who dislike something about the Democratic candidate are all more likely to vote for a Republican. Those who like something about the Democratic candidate and dislike something about the Republican candidate are less likely to vote for a Republican candidate. The two incumbency coefficients are in the expected direction as well, as voters are more likely to support incumbents than challengers. Individuals who approve of Clinton's job performance are also less likely to vote Republican. Respondents' affect toward Ken Starr has no impact on their vote. As before, we are primarily interested in testing whether coefficients differ across survey modes. Unlike the case of turnout, however, survey mode appears to be unrelated to individuals' vote choice. Of the fifteen variables in the model, none yield statistically different coefficients across modes.

Survey mode, while related to individuals' motivation for political action (turnout), is unrelated to their actual political preferences (vote choice). This discrepancy, we suspect, results in part from a latent selection process underlying

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[5] While not statistically different across subsamples, the fact that the presence of an open seat race and party contact both appear to stimulate turnout to a greater degree in the face-to-face sample is consistent

individuals' motivation to engage in a telephone interview. We believe that the respondents who ultimately completed a telephone interview are more likely to be "habitual compliers" because of their higher levels of social embeddedness, and thus behaviors such as turnout will be less sensitive to levels of resources such as information or the contextual stimulation provided by the political campaign. This type of motivation-based selection process can account for why certain variables such as political knowledge, social trust, and care which party wins exert greater influence on turnout among respondents interviewed in person than among those interviewed by phone.

Summary

The mixed-mode design of 1998 did not succeed in its stated objective of reducing data collection costs, and for that reason alone should not be repeated. But our analysis suggests some additional reasons to be wary of this design. Telephone and face-to-face respondents are not equivalent in many respects. While the demographic differences can be controlled, these controls do not wipe out differences in levels of some key time-series variables, such as vote choice and social trust. Moreover, the selection process at work in the telephone sample also appears to have influenced the behavior of certain variables in determining turnout, although not vote choice. We find the differences in models of turnout particularly intriguing (or troubling), but we are unsure whether their magnitude warrants that some of kind of selection model be employed in models of turnout in the 1998 elections and whether users should be urged to adopt such a corrective procedure. We do think, however, that a prominent notice of the following sort be inserted into the codebook alerting the user to potential biases in the 1998 sample introduced by the mixed-mode design.

The 1998 study interviewed a large fraction of respondents by telephone after an initial face-to-face contact. Comparisons of respondents interviewed by phone to those interviewed face-to-face indicate that the telephone sample is more highly educated, higher income, younger, more likely to be employed, more female, and less white. Controlling for these demographic differences, the telephone sample is more trusting, more likely to attend church, more likely to be a habitual voter, and more likely to vote for Republican congressional candidates. It is recommended that mode of interview be used as a control variable in analyses of these data.

with this argument as well.

TABLE A—AGE

	Census 1/1/99	NES 1998		Census 7/1/94	NES 1994		Census 4/1/90	NES 1990	
20-29	19%	16%	-3	20%	16%	-4	23%	21%	-2
30-39	22%	22%	0	24%	27%	+3	24%	24%	0
40-49	21%	23%	+2	20%	18%	-2	18%	17%	-1
50-59	15%	15%	0	13%	12%	-1	12%	11%	-1
60-69	10%	11%	+1	11%	12%	+1	12%	13%	+1
70-79	8%	8%	0	8%	9%	+1	8%	10%	+2
80-89	4%	4%	0	4%	5%	+1	3%	4%	+1
90-99	1%	0%	-1	1%	0%	-1	1%	0%	-1

TABLE B—GENDER

	Census 1/1/99	NES 1998		Census 7/1/94	NES 1994		Census 4/1/90	NES 1990	
Male	**49%**	**45%**	**-4**	**49%**	**47%**	**-2**	**49%**	**45%**	**-4**
20-29	20%	18%	-2	21%	17%	-4	24%	22%	-2
30-39	23%	22%	-1	25%	27%	+2	25%	25%	0
40-49	22%	23%	+1	20%	21%	+1	18%	18%	0
50-59	15%	16%	+1	13%	12%	-1	12%	14%	+2
60-69	10%	10%	0	10%	11%	+1	11%	12%	+1
70-79	7%	7%	0	7%	8%	+1	7%	6%	-1
80-89	3%	3%	0	3%	3%	0	2%	3%	+1
90-99	0%	0%	0	0%	0%	0	0%	0%	0
Female	**51%**	**55%**	**+4**	**51%**	**53%**	**+2**	**51%**	**55%**	**+4**
20-29	18%	15%	-3	19%	16%	-3	22%	20%	-2
30-39	21%	22%	+1	23%	26%	+3	23%	23%	0
40-49	21%	22%	+1	19%	16%	-3	17%	17%	0
50-59	15%	14%	-1	13%	12%	-1	12%	9%	-3
60-69	11%	12%	+1	11%	13%	+2	12%	13%	+1
70-79	9%	9%	0	9%	10%	+1	9%	13%	+4
80-89	5%	4%	-1	5%	6%	+1	4%	4%	0
90-99	1%	0%	-1	1%	0%	-1	1%	0%	-1

TABLE C—RACE

	Census 1/1/99	NES 1998		Census 7/1/94	NES 1994		Census 4/1/90	NES 1990	
White	82%	86%	+4	83%	86%	+3	84%	84%	0
Black	13%	12%	-1	13%	12%	-1	12%	13%	+1
American Indian	1%	1%	0	1%	1%	0	1%	1%	0
Asian	4%	1%	-3	3%	1%	-2	3%	2%	-1

TABLE D—INCOME

	Census 3/1997	NES 1998		Census 3/1994	NES 1994		Census 3/1990	NES 1990	
Under $5,000	3%	11%	*+8*	4%	5%	*+1*	4%	8%	*+4*
$5,000-$9,999	8%	6%	*-2*	9%	8%	*-1*	8%	10%	*+2*
$10,000-$14,999	8%	7%	*-1*	8%	9%	*+1*	8%	12%	*+4*
$15,000-$24,999	15%	14%	*-1*	16%	17%	*+1*	15%	21%	*+6*
$25,000-$34,999	13%	11%	*-2*	14%	16%	*+2*	14%	15%	*+1*
$35,000-$49,999	16%	18%	*+2*	17%	19%	*+2*	18%	17%	*-1*
$50,000-$74,999	18%	16%	*-2*	17%	16%	*-1*	18%	10%	*-8*
$75,000-$99,999	9%	9%	*0*	8%	6%	*-2*	8%	3%	*-5*
$100,000 plus	9%	8%	*-1*	8%	4%	*-4*	8%	4%	*-4*
White									
Under $5,000	3%	10%	*+7*	3%	4%	*+1*	3%	6%	*+3*
$5,000-$9,999	7%	6%	*-1*	8%	7%	*-1*	7%	10%	*+3*
$10,000-$14,999	8%	7%	*-1*	8%	9%	*+1*	8%	11%	*+3*
$15,000-$24,999	15%	14%	*-1*	15%	17%	*+2*	15%	21%	*+6*
$25,000-$34,999	13%	11%	*-2*	14%	17%	*+3*	14%	15%	*+1*
$35,000-$49,999	17%	18%	*+1*	17%	19%	*+2*	18%	18%	*0*
$50,000-$74,999	19%	17%	*-2*	18%	17%	*-1*	19%	11%	*-8*
$75,000-$99,999	10%	9%	*-1*	9%	6%	*-3*	9%	3%	*-6*
$100,000 plus	10%	8%	*-2*	9%	4%	*-5*	8%	5%	*-3*
Black									
Under $5,000	7%	14%	*+7*	9%	14%	*+5*	9%	15%	*+6*
$5,000-$9,999	14%	10%	*-4*	16%	16%	*0*	17%	14%	*-3*
$10,000-$14,999	11%	12%	*+1*	11%	12%	*+1*	11%	17%	*+6*
$15,000-$24,999	18%	18%	*0*	18%	18%	*0*	17%	22%	*+5*
$25,000-$34,999	14%	10%	*-4*	13%	11%	*-2*	13%	11%	*-2*
$35,000-$49,999	15%	18%	*+3*	13%	13%	*0*	15%	12%	*-3*
$50,000-$74,999	13%	10%	*-3*	12%	12%	*0*	12%	6%	*-6*
$75,000-$99,999	5%	6%	*+1*	4%	6%	*+2*	4%	1%	*-3*
$100,000 plus	3%	1%	*-2*	3%	1%	*-2*	3%	1%	*-2*

TABLE E—EDUCATION

	Census 1998	NES 1998		Census 1994	NES 1994		Census 1990	NES 1990	
Elementary	7%	5%	*-2*	9%	5%	*-4*	11%	10%	*-1*
High School									
1-3 years	10%	8%	*-2*	10%	14%	*+4*	11%	15%	*+4*
4 years	34%	30%	*-4*	34%	32%	*-2*	38%	34%	*-4*
College									
1-3 years	25%	26%	*+1*	24%	25%	*+1*	18%	21%	*+3*
4 or more	24%	31%	*+7*	22%	24%	*+2*	21%	20%	*-1*
Females									
Elementary	7%	5%	*-2*	9%	5%	*-4*	11%	10%	*-1*
High School									
1-3 years	10%	8%	*-2*	11%	14%	*+3*	12%	17%	*+5*
4 years	35%	32%	*-3*	36%	33%	*-3*	41%	37%	*-4*
College									
1-3 years	25%	27%	*+2*	25%	26%	*+1*	18%	20%	*+2*
4 or more	22%	28%	*+6*	20%	22%	*+2*	18%	16%	*-2*
Males									
Elementary	7%	5%	*-2*	9%	6%	*-3*	12%	10%	*-2*
High School									
1-3 years	10%	8%	*-2*	10%	13%	*+3*	11%	13%	*+2*
4 years	32%	27%	*-5*	32%	32%	*0*	36%	30%	*-6*
College									
1-3 years	24%	25%	*+1*	24%	24%	*0*	18%	23%	*+5*
4 or more	27%	36%	*+9*	25%	26%	*+1*	24%	24%	*0*

Table 1

Regression Predicting Interview Mode With Demographic Variables

Predictor	Beta
Age	-.126**
Education	.066*
Income	.116**
Minority	.052+
Female	.054+
Married	-.029
Employed	.169**
Length of Residency	.011
Home Ownership	.051

+ $p < .10$ * $p < .05$ ** $p < .01$

Table 2

Principle Components Analysis of Clinton-Lewinsky Scandal Variables

	Component 1	Component 2	Component 3
Should Clinton resign (v533)	.755	-.322	-.317
Should Clinton be impeached (v534)	.743	-.345	-.326
Approve/Disapprove how Congress handled scandal (v535)	.754	.021	.639
Strongly app/disapp how Congress handled scandal (v536)	.776	.012	.610
Approve/disapprove how media handled scandal (v537)	.461	.848	-.205
Strongly app/disapp how Congress handled scandal (v538)	.497	.826	-.208
Clinton matter public or private issue (v539)	-.680	.295	.262
Kenneth Starr impartial or partisan (v540)	.617	-.204	-.160

Table 3

Difference of Means Test for Mode

Variables	Telephone Interview	Face-to-Face Interview	Difference
Vote in 1998 (0 did not vote, 1 voted)	.5354	.5414	-.0060
Voted in 1996 (0 did not vote, 1 voted)	.734	.628	.106**
Party Contact (0 no, 1 yes)	.295	.270	.025
Strength of Partisanship (1 low, 4 high)	2.8032	2.8310	-.0278
Political Interest (1 low, 3 high)	1.9223	1.9034	.0189
Political Knowledge (0 low, 1 high)	.5594	.5305	.0289
Trust in Government (0 low, 2 high)	.5598	.5792	-.0194
Trust in Others (0 low, 1 high)	.5261	.4228	.1033**
Political Efficacy (0 low, 2 high)	1.0241	.9246	.0995**
Church Attendance (0 low, 5 high)	1.9334	1.6586	.2748*
Party Identification (0 Republican, 6 Democrat)	3.3043	3.4602	-.1559
1998 Congressional Vote (0 Republican, 1 Democrat)	.4533	.5703	-.1170*
Clinton Job Approval (1 low, 4 high)	3.0424	2.9929	.0495
Clinton Feeling Thermometer (0 low, 100 high)	58.06	59.45	-1.39
Clinton Scandal (0 for Clinton, 1 against Clinton)	.2871	.2950	-.0079

+ p < .10	* p < .05	** p < .01

Table 4

Difference of Means Test for Mode

Variables	Telephone Interview	Face-to-Face Interview	Difference
Cooperative	3.5600	3.5966	-.0360
Suspicious	1.8063	1.7103	.0960**
Interested in Interview	2.7457	2.7621	-.0164
Sincerity	1.8587	1.8414	.0173

+ p < .10   * p < .05   ** p < .01

Table 5

**Regression Predicting No-opinion Response Using
Demographic and Political Variables**

Predictors	Beta
Mode	-.028
Age	-.046
Education	-.113**
Income	-.088**
Race	.051+
Gender	.111**
Married	.039
Employed	-.019
Length of Residency	.079**
Homeownership	.046
Political Interest	-.086**
Political Knowledge	-.237**

+ p < .10   * p < .05   ** p < .01

Table 6

**Regression Predicting Acquiescence Using
Demographic and Political Variables**

Predictors	Beta
Mode	.011
Age	.068*
Education	-.186**
Income	-.105**
Race	.026
Gender	-.002
Married	.107**
Employed	.037
Length of Residency	.024
Homeownership	.015
Political Interest	-.085**
Political Knowledge	-.038

+ p < .10   * p < .05   ** p < .01

Table 7. Voter Turnout in 1998 House Elections: A Comparison of Survey Modes

	Voter Turnout						
	Full Sample		**Face to Face Sample**		**Phone Sample**		**Difference Significant?**
Resources							
Income	.12	(.18)	.16	(.41)	.17	(.21)	no, p = .857
Education	.28	(.21)	.40	(.48)	.34	(.25)	no, p = .642
Unemployed	-.69*	(.36)	-.49	(.56)	-1.26**	(.57)	no, p = .827
Age	.01	(.01)	.04	(.03)	.01	(.02)	no, p = .261
Age^2 (x .01)	.01	(.01)	-.03	(.03)	.01	(.02)	no, p = .226
External Efficacy	.23	(.20)	-.03	(.50)	.24	(.22)	no, p = .774
Political Knowledge	.52**	(.21)	1.09**	(.52)	.34	(.25)	yes, p = .093
Political Interest	.30*	(.17)	-.63	(.40)	.56***	(.21)	yes, p = .027
Evaluations of Parties							
Strength of Partisanship	.33**	(.15)	.15	(.36)	.33**	(.17)	no, p = .972
Care which Party Wins	1.17***	(.17)	1.85***	(.39)	.99***	(.21)	yes, p = .001
Social Involvement							
Years in Community (ln of)	.14***	(.04)	.24**	(.10)	.16***	(.05)	no, p = .139
Church Attendance	.41***	(.12)	.41	(.28)	.39***	(.14)	no, p = .463
Homeowner	.20*	(.11)	.06	(.26)	.21	(.13)	no, p = .869
Social Trust	.11	(.10)	.74***	(.26)	.01	(.11)	yes, p = .006
Voted in 1996	1.39***	(.13)	1.44***	(.27)	1.46***	(.16)	yes, p = .010
Mobilization by Parties							
Contacted by a Party	.31***	(.11)	.44	(.27)	.29**	(.13)	no, p = .293
Mobilization by Campaigns							
Unopposed House Seat	-.06	(.12)	-.50*	(.30)	.02	(.14)	yes, p = .098
Open House Seat	.13	(.17)	.53	(.45)	.08	(.19)	no, p = .280
Other Demographics							
Live in Southern State	-.53***	(.12)	-.08	(.29)	-.68***	(.14)	no, p = .398
Live in Border State	-.56**	(.23)	-.24	(.61)	-.89***	(.27)	no, p = .277
Blacks	.28*	(.16)	-.09	(.42)	.40**	(.18)	no, p = .492
Mexican-Americans and Puerto Ricans	.19	(.21)	.50	(.40)	.14	(.26)	no, p = .307
Constant	-3.63***	(.34)	-4.36***	(.86)	-3.61***	(.41)	
Number of Cases	1172		268		904		
Log Likelihood	-462.71		-88.37		-355.17		
% Cases Correctly Predicted	82.34		86.94		81.08		
Likelihood Ratio Index	.426		.519		.429		

Note: The above coefficients are probit estimates with standard errors in parentheses. This model of voter turnout is based on the model reported by Rosenstone and Hansen (1993) in Table D-5, pp. 282-283. Variable descriptions and coding reflect those given in Appendix B, pp. 257-265. Two variables were coded differently from RH (1993). Education here is based on a seven point scale (v980577) rather than a five point scale. Income is based on a 24 point scale (v980652) rather than quartiles. * p < .10, ** p < .05, *** p < .01, two-tailed

Table 8.
Vote Choice in 1998 House Elections: A Comparison of Survey Modes

	Vote Choice (for Republican)						
	Full Sample		**Face to Face**		**Phone**		**Difference Significant?**
Demographics							
Income	.54	(.36)	1.16	(.82)	.17	(.45)	no, p = .210
Education	-.35	(.37)	-.24	(.81)	-.40	(.47)	no, p = .967
Age	.13	(.57)	-.13	(1.31)	.41	(.70)	no, p = .803
Nonwhite	.16	(.35)	.99	(.93)	-.03	(.41)	no, p = .286
Female	-.07	(.18)	-.40	(.46)	-.06	(.23)	no, p = .438
Political Attitudes							
Party Identification	1.20***	(.34)	.27	(.79)	1.54***	(.41)	no, p = .540
Ideology	.99*	(.54)	1.80	(1.30)	.74	(.67)	no, p = .286
Like Something about Democratic Candidate	-1.27***	(.21)	-1.44***	(.49)	-1.47***	(.26)	no, p = .167
Dislike Something about Democratic Candidate	.72***	(.27)	.16	(.60)	.87***	(.33)	no, p = .654
Like Something about Republican Candidate	.74***	(.20)	.51	(.43)	.86***	(.25)	no, p = .849
Dislike Something about Republican Candidate	-.51**	(.22)	-.37	(.47)	-.56**	(.26)	no, p = .863
Clinton Job Approval	-.91***	(.33)	-1.09	(.75)	-1.19***	(.41)	no, p = .518
Feelings toward Ken Starr	.43	(.39)	.87	(.84)	.11	(.49)	no, p = .353
Incumbency							
Democrat is Incumbent	-.78**	(.32)	.12	(.93)	-1.13***	(.39)	no, p = .468
Republican is Incumbent	.63**	(.27)	.78	(.81)	.60*	(.32)	no, p = .547
Constant	-.66	(.68)	-1.41	(1.57)	-.01	(.87)	
Number of Cases	439		96		343		
Log Likelihood	-129.90		-30.40		-90.29		
% Cases Correctly Predicted	86.33		84.38		86.88		
Likelihood Ratio Index	.571		.542		.615		

Note: The above coefficients are probit estimates with standard errors in parentheses. This model of vote choice is based in part on the model reported by Jacobson (1997) in Table 5.12, pp. 108. The dependent variable in each column is a dichotomous measure of vote choice where 1 = voting for the Republican candidate. Partisanship and ideology are coded so that higher values reflect being more Republican and more conservative respectively. All variables are scaled on a common range of 0 to 1. * $p < .10$, ** $p < .05$, *** $p < .01$, two-tailed

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