

To: Joe Hardy
From: Amos Golan and Jeff Perloff
Date: October 12, 1998

Our main objectives in this note are to:

- * Describe our analysis of your 1996 survey "1689" to illustrate the types of results we can produce for you;

- * List some other analyses that we could conduct.

If any of these types of results (or others that you can suggest) are of use to you, we can analyze your existing 1998 survey or design and analyze a new survey.

WHY USE STATISTICAL ANALYSES?

We assume that the most helpful information that we can provide you is the answer to questions of the form: "How would people's votes change if they learned a specific piece of information?" We can answer these types of questions directly from the data if very large surveys are conducted. However, such surveys are expensive. Alternatively, we can use our new statistical techniques to analyze data from smaller surveys to answer these questions.

Our statistical analysis produces a model of peoples' voting behavior. Using this model, we can quickly and easily answer a large variety of "what if?" questions.

AN EXAMPLE

To illustrate our approach, we estimated a model based on your 1996 survey. We use this model to examine the likelihood that various types of voters will switch their votes as they are given new information.

In that survey, respondents are asked four times to whom they lean. After they are asked the question the first time, they are read a paragraph in which they are told that Tate accused Smith of being "another tax and spend liberal." Then they are again asked about their voting tendencies. Between the second and third time they are asked whom they favor, they are read five comments about what appear to be Smith's desirable characteristics (though some of these, like his opposition to Gingrich and support of clean air, could be viewed as weaknesses by some voters). Between the third and final time they are questioned, they are read eight apparently negative comments about Tate.

In the attached table, we show how this information affected voting tendencies of four groups of voters. The first group is female "strong Democrats." The second is male independents. Third is people with less education than a high school degree. Fourth is people with a college degree or more education. Other characteristics of these voters that are not specified vary as in the survey. For example, the well educated group includes both Democrats and Republicans of various ages who live in various districts.

The first four rows of the table show the probability that a female Democratic voter will be strongly for Smith, weakly for Smith, indifferent, weakly for Tate, or strongly for Tate. The first line presents this voter's original opinion at the beginning of the survey. Comparing the first to the second line shows how this voter's tendencies change after hearing the Tate attack of Smith. The probability that this

voter is a strong Smith supporter falls from 65.7% to 62.6%, which is 3.1 percentage points. After this voter is told about Smith's strengths, the probability that she is a strong Smith supporter rises to 67.0% (third line). Finally, after she is told about Tate's weaknesses, the probability that she is a strong Smith supporter rises to 68.3% (fourth line).

The "pro-Smith" information has mixed effects on this type of voter, possibly because not all such voters view this information as positive. While it increases the probability that she is a strong Smith supporter, it also increases the probability that she is a strong Tate supporter. (We have carefully examined the data directly and confirmed this paradoxical result.) For this voter, negative Tate information unambiguously has the effects we expect but "positive Smith" information does not.

For the male independent, negative Smith information also has a paradoxical effect. Comparing the first line of this section of the table (fifth line overall) and the second line, we see that the probability that this voter is strongly for Tate rises from 25.5% to 27.8%, but the probability that this voter is strongly for Smith also rises from 35.3% to 38.0%. In contrast, for voters with relatively little education the effect of negative Smith information increases support for Tate and reduces support for Smith as expected.

OTHER QUESTIONS

We can provide these types of analyses for much more finely specified groups, such as middle aged female Democrats with some college education who live in a particular county and like President Clinton and approves of the minimum wage. We can also tell you how a voter's tendencies change as certain characteristics change. For example, would this female Democrat be more or less likely to vote for Smith if she were five years older?

With specially designed surveys, we could determine which messages work better. For example, suppose that Congressman Smith's key position on a topic could be stated in either of two ways. We could test which message works better with specific groups of voters, which would allow your campaign to better target advertising. Similarly, with an appropriate questionnaire, we could examine which response by Congressman Smith works best for each given attack of his opponent for specific demographic groups. Further, if the appropriate questions are asked, we can examine the effect of information on the likelihood that particular groups of people vote.

CONCERNS

In evaluating our results, you should be aware of two limitations. First, as with any statistical analysis, the results must be viewed as only estimates and not truth of course. In the future, we can provide you with some measures of the reliability of our results. However, in these examples we have not calculated the reliability measures.

Second, our results are only as reliable as the underlying survey responses. If people systematically lie to interviewers, our results will reflect that distortion. We

recommend that future surveys include more questions that would allow us to test for such distortions (including such obvious ones as asking people directly if they lie to survey takers).

We were surprised to find no missing answers in the survey. As we have never seen that before in any survey we've conducted (people start refusing to answer questions toward the end of long surveys), we suggest you question your survey company how they avoided having missing values (perhaps they stick them in other categories).

We believe that your surveys would be of greater use if they were slightly redesigned. For example, a single, simple statement of "information" should be given to respondents before checking if their views changed rather than giving many lengthy statements of "facts" as in the current survey.

CONCLUSIONS

Our statistical technique allows us to investigate how specific information affects voting tendencies of various, narrowly (or, if you prefer, broadly) defined groups of voters. One important practical strength of this approach is that these questions can be answered using relatively small samples.

Table: Some Results From the 1996 survey.

	<i>Strong Smith</i>	<i>Weak Smith</i>	<i>Undecided</i>	<i>Weak Tate</i>	<i>Strong Tate</i>
<i>Female Democrat</i>					
Original	65.7	6.5	16.0	4.8	7.1
Anti Smith	62.6	8.9	15.8	5.1	7.6
Pro Smith	67.0	3.3	3.4	10.9	15.4
Anti Tate	68.3	8.6	8.9	6.1	8.1
<i>Male Independent</i>					
Original	35.3	11.7	18.7	8.8	25.5
Anti Smith	38.0	12.8	15.3	6.2	27.8
Pro Smith	36.1	13.9	19.0	2.9	28.1
Anti Tate	44.8	8.7	18.4	4.9	23.2
<i>Less than HS Degree</i>					
Original	50.2	6.8	18.1	12.4	12.5
Anti Smith	44.8	6.8	18.1	12.2	18.1
Pro Smith	39.8	12.1	23.8	12.2	12.2
Anti Tate	39.0	23.6	12.4	1.3	23.7
<i>College Diploma or More</i>					
Original	35.0	6.3	14.0	6.7	38.0
Anti Smith	33.2	5.9	13.7	6.0	41.2
Pro Smith	33.8	7.3	9.2	8.2	41.6
Anti Tate	38.0	6.7	14.9	6.7	33.6