THE 1980 PRE-ELECTION POLLS: A REVIEW OF DISPARATE METHODS AND RESULTS
Warren J. Mitofsky, CBS News

The performance of the public polls during the general election campaign of 1980 has raised doubts about the capabilities of the pollsters and their survey methodology--doubts which have not been raised during the last seven presidential elections. Since the fifties the final pre-election polls have not been criticized and have all but taken on an air of infallibility in the minds of the public and the press. Surely, the pollsters had learned all there was to be learned about "how to do it" so there would be no embarrassing episodes like there were in 1948 and 1936.

During a presidential campaign pollsters emphasize their considerable polling on issues, perceptions of the candidates and a variety of other subjects. Their polls in all years cover a wide range of non-election topics. Most of the subjects are related to current events and follow an agenda that is not unlike daily news reports. But pollsters have trapped themselves into having the public judge them by their final pre-election polls. Since 1948 the final poll has typically been released a day or two prior to the election. Interviewing has taken place in the three or four days prior to that. This has been the time frame for the final poll since the 1948 polling debacle when the pollsters conducted their final interviews several weeks before election day.

One of the stronger recommendations of the Social Science Research Council study of the 1948 election polls pointed out the need for polling right up until the end. The underlying assumption for recent years has been that not much will happen in those final days of the campaign to produce any significant movement of the public from what they will do on election day. I submit that one of the reasons that most of the polls have been reasonably close to the final outcome between 1952 and 1976 is that there has been no significant change in candidate preference by the public in the last few days of these campaigns. In a year such as 1980, when the only significant movement by the public did occur in the last week, the notion from the past is wrong. There was change in 1980 during the last week and the public polls failed to show it. Furthermore, no journalist should have been expected to accept the ad hoc argument that a poll only reflects that point in time at which it was done, as no pollster could have convincingly made that argument given the credit that each of them has taken for their "accurate" work in prior presidential elections.

There has been much speculation about what went wrong with the pre-election polls of 1980. All the major published polls seriously understated Ronald Reagan's margin of victory over Jimmy Carter (table 1) based mostly on interviewing completed late in the week before election day. The candidate polls, on the other hand, did continue their polling through election eve, and did indicate the correct magnitude of Reagan's victory. Charges and counter-charges have been raised about the so called "big bang" theory that

Reagan surged ahead in the final two days.[1] John Stacks reported this controversy in a *Time* magazine article last December, as did other journalists in other articles. It is my contention that there was significant change in presidential preference by the public starting with the Carter/Reagan debate that accelerated through election day.

Let's review the events of the final week of the campaign. Exactly a week before election day, the only debate between Jimmy Carter and Ronald Reagan was won by Reagan by a margin of 44 to 36 in a CBS News poll, and by 46 to 34 in the AP poll, and by 2 to 1 in the widely publicized ABC mock public dial-a-poll. During that same final week, Richard Allen resigned from the Reagan campaign for an alleged misuse of influence during his Nixon White House days. The same day Carter's congressional liaison, Frank Moore, resigned after repeating the unsubstantiated story of the Ayatollah's cancer. On Friday of that week the final economic indicator of the campaign showed inflation still seriously on the rise. And on Sunday morning, November 1, the Iranian parliament announced their conditions for freeing the American hostages. Jimmy Carter immediately abandoned campaigning and appeared on national television in the early evening to repeat much of what the public had been hearing all day. It was a week, in effect, with much that could affect the choices made by voters.

Right after the 1980 election--just as we did after the 1976 election--CBS News and *The New York Times* re-interviewed about 90% of the almost 2,300 people who said they were registered to vote in the final preelection poll.[2] This re-interview did indeed show that approximately one person in seven said they did something different than what they had said just prior to the election. Their shift did result in a net change that would have shown Reagan's margin at 8% as compared to his actual victory margin of 10%. Critics have accused CBS and *The Times* of everything, including designing the post-election survey to prove that a change really did exist.[3]

But estimates of presidential preference from the various polls differ even when they were conducted during the same period of time. But most polling estimates are consistent given the methodology they used. This paper will examine the effect of different survey methods and try to show that the mid-October Reagan lead in some of the polls is due to poor survey methodology. It will draw conclusions about the effect of a variety of election polling methods used by the different pollsters from data available from CBS/New York Times polls.

1 John F. Stacks, "Where the Polls Went Wrong," *Time*, December 1, 1980, pp.21-22. Alvin P. Sanoff, "The Perils of Polling 1980," *Washington Journalism Review*, Jan/Feb 1981, pp. 32-35.
2 "Post-Election Poll," CBS News/*New York Times*, November 1980.
3 Stacks, p 22.

Rather than pursue a discussion of methodology and its effects on the estimates of this election by examining only the final estimates, it would be more fruitful to look at the polls at a time during the week prior to the Carter-Reagan debate (10/28/80) when many polling organizations, both public and private, were producing estimates. What can be seen in table 1 is roughly two different sets of estimates. Gallup, Cambridge Survey Research (Carter) and the CBS/New York Times polls showed a relatively small Carter margin. The Decision Making Information (Reagan), ABC/Harris and NBC/AP polls showed a nominal Reagan lead.

The issue of election poll methodology is not new. The recommendations of the Social Science Research Council in their monograph about the 1948 pre-election polls[4] pointed out the need for better methodology. Their basic recommendation discussed a need for increased reliance on probability sampling. Other recommendations concerned problems peculiar to election research. Thirty-two years later, a strong adherence to sampling theory is still lacking. Furthermore, several of the technical problems raised by the SSRC that relate to elections have little theoretical basis and remain unresolved.

The remainder of this paper reviews the stages of survey methodology that are common to most polls. The arguments are based on data collected in CBS/New York Times polls and will be used to infer the effects that other polls probably experienced.

SAMPLING

The interviewing approach for all but one of the polling organizations is by telephone. The sampling procedure generally is a selection of telephone households such that each one-telephone household has an equal probability of selection. This sampling procedure was developed at CBS eleven years ago and is formalized in Waksberg's well known JASA paper. For the CBS/Times polls household selection starts with a sampling frame of all exchanges in the United States. This frame is stratified by geographic region, size of place within region, and finally, by area code. A systematic random selection at a uniform rate is carried out for all exchanges in the continental United States. (Both Alaska and Hawaii are excluded.) Four random digits are added to selected exchanges to complete a phone number. Each sample number is then screened. Only those that are working residential numbers are retained in the sample. This stage of sampling results in the selection of a cluster, defined by the area code - exchange - and the two high order digits of a phone number. The next stage of sampling is a systematic random selection within these clusters of 100 potential phone numbers. The sample size in each cluster is a constant. This results in a household selection with an exactly equal probability of selection for all telephone

4 Frederick Mosteller, et.al., The Pre-election Polls of 1948. Social Science Research Council, 1949.

households having exactly one telephone. No attempt is made to correct the probability of selecting households with more than one telephone, as the effect of this bias was negligible from research done by CBS several years ago. There is also the obvious bias of excluding non-telephone households.

The best information available suggests that even though the exact sample selection procedures vary somewhat, most of the polls do use a sample selection procedure that has a similar result for selecting households. Identifiable differences in sample selection do occur for the selection within households. All of the polls select one adult 18 or over per household. Most of the polls make no attempt to select an adult at random from among all adults living in selected households. Some use a male/female or other quota control selection. Most select from only those individuals at home at the time and make no call-backs even though they may select from among those home in a quasi-random manner. Furthermore, most polls make no allowance for the varying probabilities of selecting an adult from different size households (see table 2).

Both Harris and DMI produce estimates daily based on all persons in that day's sample, plus all people reached on a first call-back from homes that are not reached on the prior day, plus people reached on a second call-back and were originally called two days earlier. This practice, while clearly questionable as a random sampling procedure, at least makes a passing attempt at recognizing the effect of call-backs. (I have no data to shed any light on the effect of this practice. However, there are differences in presidential preference for people reached on the first call and subsequent calls.)

For the CBS/New York Times polls one adult is selected at random from among all adults residing in the household. Appointments are made if the person selected is not at home when the household is reached. Up to four calls are made, if necessary, to contact the household.

The presidential preference of adults in varying size households can be seen in table 3. The one-adult households showed a definite preference for Carter and those with two adults preferred Reagan. Preference also varies in the larger size households. However, weighting only for household size has little effect on estimates of presidential preference or the political party respondents identify with (see table 4). Whether this would be the case for non-random selection within households is unknown. Also, not taking account of the probabilities of selection could have a serious effect on other survey characteristics or on presidential preference in other surveys. However, this phase of the methodology did not have the same impact on the estimates reported by CBS and The Times as did other phases of the weighting procedure.

RATIO ESTIMATION

There seems to be a built-in aversion on the part of a number of polling organizations to using

ratio estimates or other estimators that theoretically would reduce the overall variation of their estimates. One prominent pollster refers to any weighting procedure as "cooking" the data. On the other hand, the same pollster sees nothing wrong with looking at an unweighted sample distribution by region or sex or some other characteristic and producing an occasional "adjustment factor" to make the sample, as he says, "more representative."

The ratio estimation procedure used in the CBS News/New York Times polls is done in two stages. The first stage consists of black/non-black by sex; the second stage is age by education in four categories each, with a limitation on the minimum sample cell size and on the disparity between the largest and the smallest resulting weight.

As can be seen in table 4, the sharpest change in presidential preference occurs as a result of the ratio estimation procedure. There is a six percentage point shift in the Reagan/Carter margin in the final CBS/New York Times pre-election poll between the weighting only by the probabilities of selection and the subsequent ratio estimates. The estimates of party identification show a similar shift, as do estimates of presidential preference and party identification in the two earlier polls. However, there is no difference in the coefficient of variation on presidential preference as a result of the ratio estimates. It does differ for the political party respondents identify with.

COEFFICIENT OF VARIATION
FINAL PRE ELECTION POLL

	HOUSEHOLD SIZE WEIGHT ONLY	RATIO ESTIMATE WEIGHTS
CARTER	.026	.027
REAGAN	.022	.021
DEMOCRATIC	.026	.035
REPUBLICAN	.038	.029

These relatively small changes in the CBS/New York Times estimates of presidential preference are a consequence of a methodology that is clearly different from other polls. Only part of the difference between the CBS/New York Times presidential preference estimates and those of other polls can be attributed to the estimation procedure as described so far. There are other methodological differences that are related to the likelihood of going to the poll and voting.

THE PROBABLE ELECTORATE AND LIKELY VOTERS

Obviously, not all those who are registered to vote actually go to the polls on election day and vote. However, all those who are not registered are not automatically precluded from voting. Some states either have registration at the polls or in some cases no registration requirements at all. Nevertheless, it is reasonable to eliminate those individuals who are not registered from the base of a calculation on voting prefer-

ence. The CBS/New York Times post-election survey showed that approximately 2% of those who were unregistered claimed to have voted and another 2% said they registered on election day at the polls.

There are several ways pollsters go about deciding who among the registered will vote. The most common method is to ask people a number of questions, in addition to registration, that get at their interest in the campaign, their intention to vote and their past participation in electoral contests. These items are combined to form an index so respondents can be classified from most likely- to least likely- to vote. Many pollsters establish a cut-off point that retains only the more likely individuals as the base for preference estimates. The size of the most likely voter group approximates the "expected" voter turnout. (The ABC/Harris poll has this screening procedure administered by the interviewer rather than after the fact during the processing phase. A Harris interviewer terminates the questioning if the respondent is not a high likely voter.)

A different approach was used in the CBS/New York Times polls in 1980. This method assigns a likelihood, or probability, of voting to all those respondents who are registered. The basis for assigning this probability is similar to establishing the index described above. The sum of these probabilities approximate the expected voter turnout. The logic of this approach assumes that all of the most likely people don't always vote and all of the most unlikely don't all stay home.

Table 4 shows a comparison of the CBS/New York Times "Probable Electorate" estimates and the other stages of estimation. The difference between the ratio estimates of presidential preference for all registered adults and the probable electorate estimates is not significant.

Table 5 shows the preferences of the most likely voters, which is the concept used by all of the other polls. To complete the comparison, table 5 also shows the preference of the other registered voters--the ones excluded from most polls who are decidedly more pro-Carter--and the probable electorate. There are small differences between the probable electorate estimates and those based on most likely voters. This approximation to the "most likely voter" group using just the CBS/New York Times data with ratio estimates may not adequately reflect the refinement in establishing an index of participation in the election that is used by some of the pollsters. These results are at best illustrative of other polls. However, it can be observed that for the 1980 election, there is a difference between the most likely and least likely groups in their presidential preferences.

One point needs to be stated explicitly on this issue on voter turnout. Both approaches assume some expectation about the proportion of the population that will vote. That assumption only needs to be approximate. Small variations in this turnout expectation will not change the

estimates of presidential preference. That is not to say that a real difference in actual voter turnout won't change an election outcome. It is just that most polling data is not sensitive enough to measure small differences in expected turnout.

THE OVERALL EFFECT OF VARIOUS METHODS

As a means of understanding the impact of the various methods used by some of the polls it is instructive to look at estimates based on CBS/New York Times poll data that are 1) unweighted, 2) limited to those adults who are the most likely to vote (as described above), and 3) reached on the first phone call to the residence. This is a reasonable approximation to the DMI and NBC/AP methods. This "limited estimate" from the mid-October CBS/New York Times poll data shows a Reagan margin of 6 percentage points. DMI and NBC/AP polls had 6 to 8 point Reagan margins on their closest interviewing dates. (I believe these mid-October Reagan leads are an artifact of their methods.)

	CBS/NYT* 10/20-16	DMI 10/19-17	DMI 10/24-22	NBC/AP 10/24-22
REAGAN	46%	43%	44%	42%
CARTER	40	36	36	36
ANDERSON	10	8	10	10

*Unweighted, and based on those most likely to vote and reached on first phone call.

If their results are fairly represented by this methodology then one could reasonably hypothesize a much larger margin for Reagan over Carter from those polls conducted late enough to reflect the late switching of preference. The CBS/New York Times post-election poll did show late switches in preference. The CSR polls showed the contest tied on Saturday, a 5 point Reagan margin on Sunday and a 10 point Reagan margin in their final poll on election eve. DMI does have the data to substantiate this notion, but they have not made their daily polls available, and say they won't until Reagan leaves office. What they have reported are three-day averages for what they claim are independent daily polls of about 500 interviews. It is not unreasonable, however, to imagine that their election eve poll seriously overstated Reagan's margin, perhaps by as much as 10 percentage points. Everett Ladd apparently did have access to the DMI daily numbers. In an article in Political Science Quarterly (Spring, 1981) he compared the DMI and CSR polls and claims they show a similar trend in the last few days when one looks at the daily DMI estimates rather than the three-day averages. Ladd says, "Wirthlin's (DMI) daily polls showed a comparably sharp move to the Republican candidate over the last few days." NBC/AP completed their final poll on October 24th, so there are no later results to test this notion.

TABLE 1

PRESIDENTIAL PREFERENCE, 1980

INTERVIEW DATES

TO	FROM	POLL	REAGAN	CARTER	ANDERSON	OTHERS	UNDECIDED	REAGAN –CARTER
11/4		Actual Vote	51	41	7	1		+10
11/3	11/1	DMI	45	34	9		12	+11
	11/3	CSR	46	36	10		8	+10
11/2	10/31	DMI	45	34	9		13	+11
	11/1	CSR	45	40	10		5	+5
	10/22	ABC/Harris	46	41	9	1	3	+5
11/1	10/30	DMI	45	35	9		11	+10
	10/31	CSR	41	41	9		8	0
	10/22	ABC/Harris	45	40	10	1	4	+5
	10/30	Gallup	46	43	7		4	+3
	10/30	CBS/NYT	44	43	8	1	4	+1
10/30	10/29	WASH POST*	43	39	9		9	+4
	10/29	WASH POST	39	43	7		12	–3
	10/28	DMI	44	37	10		9	+7
	10/29	CSR	44	39	10		6	+5
	10/29	Gallup	44	43	8	1	4	+1
	10/22	ABC/Harris	45	40	10	1	4	+5
10/27	10/25	DMI	43	38	10		9	+5
	10/26	CBS/NYT	39	42	8	1	10	–3
	10/22	ABC/Harris	45	42	10		3	+3
10/26	10/24	DMI	43	38	11		9	+5
	10/24	CSR	40	41	10		9	–1
	10/22	ABC/Harris	46	42	10		3	+3
	10/25	Gallup	42	45	9	1	3	–3
10/25	10/22	ABC/Harris	45	42	10		3	+3
10/24	10/22	NBC/AP	42	36	10	3	9	+6
	10/22	DMI	44	36	10		10	+8
10/20	10/18	DMI	43	35	8		13	+8
	10/16	CBS/NYT	41	43	10	1	5	–2

*Panel study

TABLE 2

WITHIN HOUSEHOLD POLLING METHODS

	WITHIN HOUSEHOLD RESPONDENT SELECTION	CALL-BACKS	WEIGHTING FOR HH SIZE
CBS/NYT	Random (with appointments)	Up to 4	yes
Gallup	Youngest male or oldest female	None	yes
ABC/Harris	Systematic by sex quota	None*	no
NBC/AP	Systematic by sex quota	None	no
WASH POST	Random among those present	Up to 3	no
DMI	Systematic by sex quota	None	no
CSR	Sex quota	Unknown	no

Source: ABC/Harris, NBC/AP, see Public Opinion, December/January 1981, p. 18. Washington Post Poll, reported by Barry Sussman; DMI public statements by Vince Breglio and Richard Wirthlin.

*Households not reached in one survey are retained for one or two more surveys.

TABLE 3

PRESIDENTIAL PREFERENCE (INCLUDING LEANERS) BY HOUSEHOLD
SIZE FOR REGISTERED RESPONDENTS, UNWEIGHTED

INTERVIEWING DATES	CANDIDATE PREFERENCE	NUMBER OF ADULTS IN HOUSEHOLD			
		1	2	3	4+
10/30-11/1	REAGAN	36	47	42	45
	CARTER	45	39	43	38
	ANDERSON	11	8	9	6
	N=	(450)	(1,419)	(256)	(139)
10/26-10/27	REAGAN	31	41	49	33
	CARTER	45	38	35	44
	ANDERSON	11	9	9	9
	N=	(264)	(786)	(127)	(82)
10/16-10/20	REAGAN	35	45	42	34
	CARTER	45	40	39	39
	ANDERSON	12	10	9	19
	N=	(344)	(924)	(173)	(98)

TABLE 4

PRESIDENTIAL PREFERENCE AND PARTY IDENTIFICATION FOR REGISTERED ADULTS,
UNWEIGHTED, WEIGHTED FOR THE UNEQUAL PROBABILITY OF SELECTION, WEIGHTED
WITH RATIO ESTIMATES, AND PROBABLE ELECTORATE

DATES OF INTERVIEWING 10/30-11/1	REAGAN	CARTER	ANDERSON
UNWEIGHTED	44	41	9
WEIGHTED FOR HOUSEHOLD SIZE ONLY	45	40	9
WEIGHTED WITH RATIO ESTIMATES	42	43	8
PROBABLE ELECTORATE	44	43	8
	REP	DEM	
UNWEIGHTED	25	43	
WEIGHTED FOR HOUSEHOLD SIZE ONLY	26	43	
WEIGHTED WITH RATIO ESTIMATES	24	46	
PROBABLE ELECTORATE	25	46	
	REAGAN	CARTER	ANDERSON
10/26-10/27			
UNWEIGHTED	39	40	9
WEIGHTED FOR HOUSEHOLD SIZE ONLY	40	39	9
WEIGHTED WITH RATIO ESTIMATES	39	41	9
PROBABLE ELECTORATE	39	42	8
	REP	DEM	
UNWEIGHTED	23	43	
WEIGHTED FOR HOUSEHOLD SIZE ONLY	23	43	
WEIGHTED WITH RATIO ESTIMATES	22	45	
PROBABLE ELECTORATE	22	45	
	REAGAN	CARTER	ANDERSON
10/16-10/20			
UNWEIGHTED	42	41	11
WEIGHTED FOR HOUSEHOLD SIZE ONLY	42	40	11
WEIGHTED WITH RATIO ESTIMATES	40	43	11
PROBABLE ELECTORATE	41	43	10
	REP	DEM	
UNWEIGHTED	25	43	
WEIGHTED FOR HOUSEHOLD SIZE ONLY	24	43	
WEIGHTED WITH RATIO ESTIMATES	23	46	
PROBABLE ELECTORATE	24	45	

Note: The unweighted estimates assume each respondent has a weight of 1.
Those weighted for the probability of selection within households
assume relative weights from 1 to 6.

TABLE 5

PRESIDENTIAL PREFERENCE FOR REGISTERED RESPONDENTS MOST
LIKELY TO VOTE, BALANCE OF THE REGISTERED RESPONDENTS,
AND THE PROBABLE ELECTORATE

DATES OF INTERVIEWING 10/30-11/1	REAGAN	CARTER	ANDERSON
Registered, most likely to vote	45	43	7
Balance of registered to vote	37	41	8
Probable Electorate	44	43	8
10/26-10/27	REAGAN	CARTER	ANDERSON
Registered, most likely to vote	42	41	9
Balance of registered to vote	33	41	10
Probable Electorate	39	42	8
10/16-10/20	REAGAN	CARTER	ANDERSON
Registered, most likely to vote	44	42	8
Balance of registered to vote	30	44	15
Probable Electorate	41	43	10