

US Count Votes
Response to Edison/Mitofsky Election System 2004 Report
<http://exit-poll.net/election-night/EvaluationJan192005.pdf>

Background

After last November's presidential election, there were numerous reports of irregularities. Reported problems¹ included:

- voting machine shortages
- ballots counted and recounted in secret
- lost, discarded, and improperly rejected registration forms and absentee ballots
- touch-screen machines that registered "Bush" when voters pressed "Kerry"
- precincts in which there were more votes recorded than registered voters
- precincts in which the reported participation rate was less than 10%
- high rates of "spoiled" ballots and under-votes in which no choice for president was recorded
- a sworn affidavit by a Florida computer programmer who claims he was hired to develop a voting program with a "back door" mechanism to undetectably alter vote tallies

These problems arise in the context of election systems where un-auditable voting equipment cannot provide assurance that votes are counted as cast. The crucial question is whether these problems were part of a larger pattern. Were these issues collectively of sufficient magnitude to reverse the outcome of the election, or were they isolated incidents, procedurally disturbing but of little overall consequence?

Under such circumstances we must rely on indirect evidence, such as exit polls, to ascertain the overall integrity of the official election results. The 2004 exit poll was conducted by Edison Media Research and Mitofsky International on contract with major national press and TV news services, operating collectively as the National Election Pool. Immediately following the election, these polls raised a red flag because they showed that Kerry had won the popular vote by a margin of 3%, while the official tally indicated a Bush victory by 2.5%.

Shortly after the exit poll disparity was noted, the Edison/Mitofsky group took the position that their own projections could not be taken as an indication of error in the official vote count. The theory they put forward to explain the disparity was that more of the Bush voters had declined to be interviewed for the exit polls, while more of the Kerry voters had completed the poll questionnaire. A full report was promised, and last week that report was released.

Introduction to the Edison/ Mitofsky Report

On January 19, 2005, Edison Media Research and Mitofsky International released a 77-page report on their (p. 3) "analysis of the performance of the exit polls" in the 2004 election. The Edison/Mitofsky report acknowledges widespread discrepancies between their exit polls and official counts, and admits that the differences were far greater than can be explained by sampling error. The report repeats the assertion (p. 3) that this disparity was "most likely due to Kerry voters participating in the exit polls at a higher rate than Bush voters", but no evidence is offered to support this conclusion. In fact, data newly released in the report

¹ Reports were recorded by non-partisan organizations Vote Watch, Vote Protect, and Voters Unite: www.votewatch.us voteprotect.org www.votersunite.org and House Committee on the Judiciary Preserving Democracy: What Went Wrong in Ohio (January 5, 2005)

suggests that Bush supporters might have been *overrepresented* in the exit polls, widening the disparity to be explained. The report gives no consideration to alternative explanations involving election irregularities.

The position taken by the Edison/Mitofsky group is consistent with professional norms and practices. Election survey analysts ordinarily assume that official election results are the objective standard against which their own findings must be weighed, and perhaps found wanting. We admire Edison/Mitofsky's willingness to find fault with their methods and interview results. However, nothing in their report demonstrates that such errors could account for the gap between the exit polls and the election results.

We consider here the three possible explanations for a discrepancy between the official vote count and exit polls:

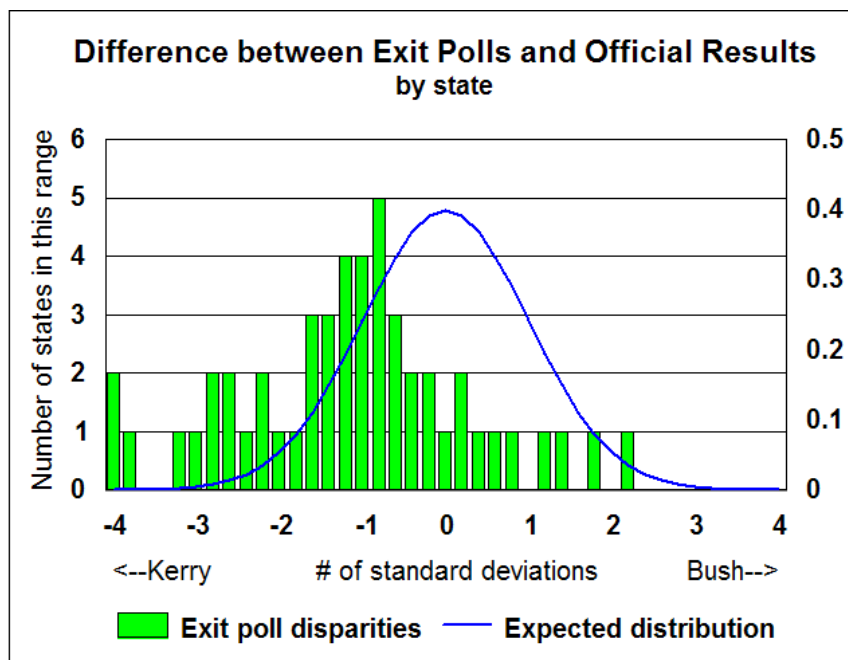
1. Statistical sampling error – or chance
2. Inaccurate exit polls – Kerry supporters responded in greater numbers than Bush supporters.
3. Inaccurate election – the voters' intent was not accurately recorded or counted.

We agree with Edison/Mitofsky that the first possible cause, random statistical sampling error, can be ruled out. The second possible cause, that inaccurate exit polls were biased towards Kerry, is a hypothesis that is compelling only if one dismisses the third, that official election results may have been distorted².

Analysis

1. Random Error

We agree with Edison/Mitofsky that random chance as a possible explanation for discrepancies between exit polls and official election results can be dismissed with statistical tests. Edison/Mitofsky report scores by state, which are clearly skewed in this visualization:



² See USCountVotes.org, VerifiedVoting.org or VoteProtect.org

Seven of fifty states have t values less than -2.7 , meaning that each of them had less than 1% probability of having the reported difference between exit polls and election results occurring by chance. The binomial probability that 7 of 50 should be so skewed is less than one in 10,000,000. A full comparison of the exit polls with the null distribution (blue curve) via a Shapiro-Wilk test yields a probability that is astronomically small.

The visual plot suggests a model for the result that may be useful in further investigation: Aside from three outlier states (on the left) the data appear to be normally distributed with a mean shifted 1.0 standard deviations toward Kerry. The data without these three passes the Shapiro-Wilk test for normality ($p=.4$), with a shifted mean. Two hypotheses to explore are that (2) the exit polls were subject to a consistent bias of unknown origin; or (3) the official vote count was corrupted.

2. Exit Poll Error

Exit polling is a well-developed science, informed by half a century of experience and continually improving methodology³. Accurate prediction of election results with exit polls involves three steps: (a) In each state a set of representative precincts is chosen that mirrors the state as a whole in demography and historic voting patterns. (b) Voters from those precincts are randomly selected for polling as they exit the polling place. (c) In constructing a prediction for statewide outcomes, algebraic weightings are used to correct for the observed demographic composition of the sample. For example, responders are re-balanced by race and gender in this process to assure a representative sampling of the state.

The report analyzes the reliability of steps (a) and (c). *Official vote tallies* from the sampled precincts were substituted for exit polls in the weighting formulas, to see if the results would correctly “predict” statewide voting patterns. This procedure (pp. 28-30) confirms that steps (a) and (c) worked well. The selected precincts accurately predicted the results in their respective states, with only a small observed bias (0.3%) which was actually in the *opposite direction* to the bias that resulted when exit poll numbers were used.

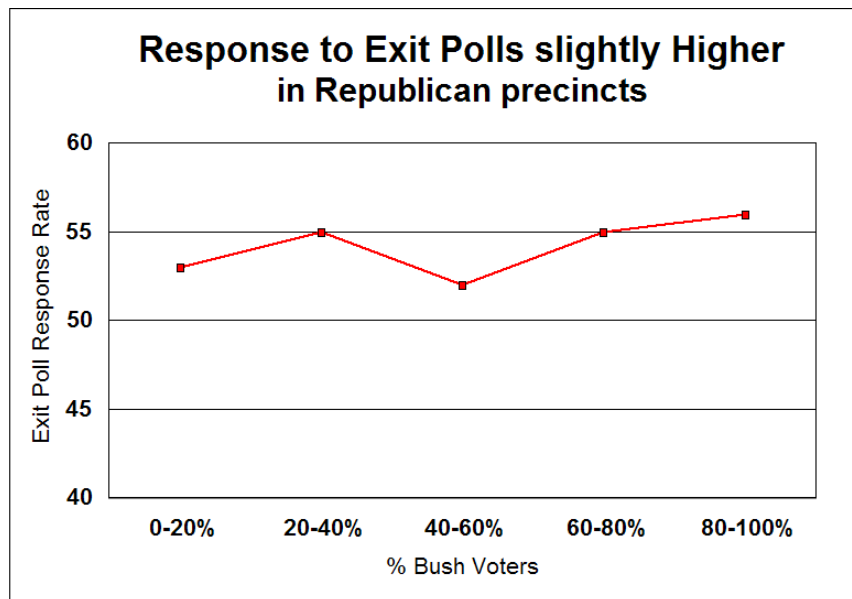
The remaining uncertainty in the process comes from step (b), and is referred to in the report as within-precinct error (WPE). WPE is an average of the difference between the percentage margin between the leading candidates in the exit poll and the actual vote for all sample precincts in a state.

Authors of the report seek to explain the overall disparity between exit polls and official results in terms of WPE. They calculate that the required shift toward Kerry in the exit polls must have been 6.5%. They note that this number is greater than any WPE from past presidential elections going back more than 20 years, to a time when polling science was less sophisticated and less reliable than at present. They also note that this 6.5% WPE stands out in comparison to WPE from state primaries exit polls in 2004, which averaged 1.9%.

The report proposes to explain the WPE with the following statement (p. 31): “While we cannot measure the completion rate by Democratic and Republican voters, hypothetical completion rates of 56% among Kerry voters and 50% among Bush voters overall would account for the entire Within Precinct Error that we observed in 2004.” This, apparently, is the basis for their statement in the Executive Summary (p. 4), “It is difficult to pinpoint precisely the reasons that, in general, Kerry voters were more likely to participate in the exit polls than Bush voters.”

No data in the report supports the hypothesis that Kerry voters were more likely than Bush voters to cooperate with pollsters, and the data suggests that the opposite may have been true:

³ www.appliedresearch.us/sf/Documents/ExitPoll.pdf



This chart was constructed from data within the report (p. 37) that is not analyzed or mentioned in the text. This data bears directly on the plausibility of the report’s central hypothesis, and it goes in the wrong direction. In other words, in precincts with higher numbers of Bush voters, response rates were slightly *higher* than in precincts with higher number of Kerry voters.

3. Inaccurate Election Results

Mitofsky/Edison say in their Executive Summary (p. 3), “Exit polls do not support allegations of fraud ...” but they do not consider the hypothesis of election fraud. They use the word “error” consistently to analyze potential problems with the *exit polls*, always assuming the correctness of the *election results* without providing supporting evidence for that assumption.

The report shows differences in WPE for different types of voting equipment (p. 40). Precincts with paper ballots in rural precincts showed a median WPE of -0.9, consistent with chance, while all other technologies were associated with unexplained high WPE:

Type of equipment used at polling place	Median WPE Overall
Paper ballot	-0.9
Mechanical voting machine	-10.3
Touch screen	-7.0
Punch cards	-7.3
Optical scan	-5.5

They implicitly dismiss the possibility that errors for all four automated voting systems could derive from errors in the election results and their breakdown for voting equipment ignores whether results are tallied in the precinct or at a central location. Regrettably, the authors omit to specify P-values or significance levels or the statistical method by which they arrived at their conclusion that voting machine type is not related to WPE, nor do they provide the raw data by which one might evaluate that conclusion. The Edison/Mitofsky report does not report having done an ANOVA of voting machine type that might confirm their claim that there is no difference between precincts using different voting machines.

The many anecdotal reports of voting irregularities create a context in which the possibility that the overall vote count was substantially corrupted must be taken seriously. The hypothesis that the discrepancy between the exit polls and election results is due to errors in the official election tally is a coherent theory.

Summary

As citizens in a democracy, we have an abiding interest in the integrity of the election process.

The Edison/Mitofsky report confirms there were large differences between their exit polls and the official results of the 2004 presidential election – much more so than in previous elections. The national exit poll indicated a 3 point victory for Kerry; whereas the official election results indicated that he lost by 2.5%, a difference of 5.5%.

The Edison/Mitofsky report fails to substantiate their hypothesis that the difference between their exit polls and official election results should be explained by problems with the exit polls. They assert without supporting evidence that (p. 4), “Kerry voters were more likely to participate in the exit polls than Bush voters.” In fact, data included within the report suggest that the opposite might be true.

Their analysis of the potential correlation of exit poll errors with voting machine type is incomplete and inadequate, and their report ignores the alternative hypothesis that the official election results could have been corrupted.

The Edison/Mitofsky report states (p.12), “We need to do more investigation into the causes of the statistical skew in the exit poll data for the general election.” USCountVotes agrees, and we suggest that that investigation extend to the official vote count tallies. In this context, USCountVotes affirms our mission to create and analyze a database containing precinct-level election results for the entire United States in order to do a thorough mathematical analysis of the 2004 election results.

We invite all those who care about democratic processes in this country to join us in fully investigating and explaining what really happened in the 2004 Presidential election.

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This document can be found online:

http://uscountvotes.org/ucvAnalysis/US/USCountVotes_Re_Mitofsky-Edison.pdf