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**Graduate Division, School of Arts & Sciences**  
**Center for Organizational Dynamics**  
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Note on this revision: The thesis of the initial drafts of this paper that were widely circulated on the Internet, was that exit poll discrepancy could not have been due to chance or random error. My purpose was to raise as a legitimate question, "What caused it?" In this version, I begin to try to answer that question.

I'm releasing this paper in two parts, so as to replace the early drafts as soon as possible. Part I is to clean up the previous draft. Part II will be new analysis.

Reading note: To help non-academic readers, I have put in much more explanatory material than typical —, especially in the statistical analysis sections (also a glossary in Appendix B). My apologies to those for whom these explanations are superfluous. Just skip over those sections.

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## **The Unexplained Exit Poll Discrepancy: Part I**

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**Steven F. Freeman, PhD**

[stfreema@sas.upenn.edu](mailto:stfreema@sas.upenn.edu)

Most Americans who had listened to radio or surfed the Internet on Election Day this year, sat down to watch election night coverage expecting that John Kerry had been elected President. Exit polls showed him ahead in nearly every battleground state, in many cases by sizable margins. Although pre-election day polls indicated the race dead even or Bush slightly ahead, two factors seemed to explain Kerry's edge: turnout was extraordinary high, which is generally good for Democrats,<sup>1</sup> and as in every US Presidential election with an incumbent over the past quarter-century,<sup>2</sup> undecided voters broke heavily toward the challenger.<sup>3</sup>

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1 Jack Citrin, Eric Schickler & John Sides, "What If everyone voted? Simulating the impact of increased turnout in senate elections" *American Journal of Political Science*, 2003, 47 (1) 75-90: Nonvoters are generally more Democratic than voters. Democratic party candidates generally benefit from higher turnout because the increase comes disproportionately from voters in socio-economic groups that traditionally vote Democratic.

2 Guy Molyneux, "The Big Five-Oh", *The American Prospect Online*, Oct 1, 2004: There have been four incumbent presidential elections in the past quarter-century. On average, the incumbent comes in half a point below his final poll result; challengers exceed their final poll result by an average of 4 points.

3 Even the final "corrected" exit poll data presented on the CNN website — more on such corrected data later — indicate that those who decided in the last three days chose Kerry over Bush 55% - 42%.  
<<http://www.cnn.com/ELECTION/2004/pages/results/states/US/P/00/epolls.0.html>> (Thursday Nov 14, 2004)

But then, in key state after key state, counts showed very different numbers than the polls predicted; and the differentials were all in the same direction. The first shaded column in Table 1 shows the differential between the major candidates' predicted (exit poll) percentages of the vote; the next shaded column shows the differential between their *tallied* percentages of the vote. The final shaded column reveals the "shift." In ten of the eleven consensus battleground states,<sup>4</sup> the tallied margin differs from the predicted margin, and in every one, the shift favors Bush.

**Table 1<sup>5</sup>: Predicted vs. tallied percentages in battleground states**

	Sample size	Bush predicted	Kerry predicted	Predicted differential	Bush tallied	Kerry tallied	Tallied differential	Tallied vs. predicted
Colorado	2515	49.9%	48.1%	Bush 1.8	52.0%	46.8%	Bush 5.2	Bush 3.4
Florida	2846	49.8%	49.7%	Bush 0.1	52.1%	47.1%	Bush 5.0	Bush 4.9
Iowa	2502	48.4%	49.7%	Kerry 1.3	50.1%	49.2%	Bush 0.9	Bush 2.2
Michigan	2452	46.5%	51.5%	Kerry 5.0	47.8%	51.2%	Kerry 3.4	Bush 1.6
Minnesota	2178	44.5%	53.5%	Kerry 9.0	47.6%	51.1%	Kerry 3.5	Bush 5.5
Nevada	2116	47.9%	49.2%	Kerry 1.3	50.5%	47.9%	Bush 2.6	Bush 3.9
New Hampshire	1849	44.1%	54.9%	Kerry 10.8	49.0%	50.3%	Kerry 1.3	Bush 9.5
New Mexico	1951	47.5%	50.1%	Kerry 2.6	50.0%	48.9%	Bush 1.1	Bush 3.7
Ohio	1963	47.9%	52.1%	Kerry 4.2	51.0%	48.5%	Bush 2.5	Bush 6.7
Pennsylvania	1930	45.4%	54.1%	Kerry 8.7	48.6%	50.8%	Kerry 2.2	Bush 6.5
Wisconsin	2223	48.8%	49.2%	Kerry 0.4	49.4%	49.8%	Kerry 0.4	No dif

The media has largely ignored this discrepancy (although the Blogosphere has been abuzz), suggesting that the polls were either flawed, within normal sampling error, a statistical anomaly, or could otherwise be easily explained away. In Part I of this paper, I examine the validity of exit polls, the likelihood of sampling error, and the possibility of statistical anomaly and show that the exit poll discrepancy could not have been due to chance or random error. In Part II, I explore the explanations for what did cause it, and speculate on the big question on readers' minds, what this data can tell us about whether the count was correct.

## Exit Poll Data

The data I use for this paper are those posted on the CNN website Election Night. CNN had the data by virtue of membership in the National Election Pool (NEP), a consortium of news

<sup>4</sup> These eleven states are classified as battleground states based on being on at least two of three prominent lists: *Zogby*, *MSNBC*, and the *Washington Post*. (These eleven did in fact turn out to be the most competitive states in the election along with Oregon where Kerry won by 4%; in no other state was the winning margin was within 7%.)

<sup>5</sup> Source: CNN website. Wednesday November 3, 2004 12:21 am.

organizations that had pooled resources to conduct a large-scale exit poll (as was done in the 2000 election). NEP, in turn, had contracted two respected firms, Edison Media Research and Mitofsky International,<sup>6</sup> to conduct the polls.

### Calibrated and Uncalibrated Exit Poll Data<sup>7</sup>

Part of the reason the issue went away for the media – and has become fodder for conspiracy theorists on the web – is secrecy and confusion about the data and what exactly is being characterized as the exit poll. If you go to the CNN website or any other website on which 2004 exit poll data is available, you'll see numbers very different from those that were released on Election Day. That's because the survey results originally collected and presented to subscribers were subsequently “corrected” to conform to official tallies.

The pollsters explain this as a natural process: the “uncalibrated” data were preliminary; once the counts come in, they recalibrate their original data on the assumptions that the count is correct, and that any discrepancies must have been due to imbalanced representation in their samples or some other polling error. The pollsters have taken great pains to argue that their polls were not designed to verify election results,<sup>8</sup> but rather to provide election coverage support to subscribers: as one piece of data (among many) that networks could use to “call” states and to explain voting patterns, i.e., who voted for whom, and why people voted as they did.

Whatever the merits of calibrating exit poll data, it confuses the issue of *why* the (uncalibrated) polls were so far off and why in the same direction. Although this calibration process may seem perfectly natural to NEP, it confuses nearly everyone else, even sophisticated analysts intimately involved in voting issues. The MIT-Caltech Voting Project, for example, issued a report concluding that exit poll data were consistent with state tallies and that there were no discrepancies based on voting method, including electronic voting systems. But they used this adjusted data to exonerate the process! In other words, they used data in which the count is

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<sup>6</sup> Warren Mitofsky, the founder of Mitofsky International is credited with having invented the exit poll. David W. Moore, Senior Gallup Poll Editor, “New Exit Poll Consortium Vindication for Exit Poll Inventor” 10/11/2003

<sup>7</sup> To try to avoid reader confusion, I've included a glossary in Appendix B.

<sup>8</sup> Martin Plissner, “In Defense of Exit Polls: You just don't know how to use them” *Slate* Thursday, Nov. 4, 2004

assumed correct to prove that the count is correct. And, sadly, this report is being used to dismiss allegations that anything might be awry.<sup>9</sup>

It's an awful mistake, but it is understandable how they could make it. Few of us realized that this data is corrected. Neither the CNN website, nor any other site of which I'm aware, gives any indication that the data were anything other than what nearly all of us imagine exit poll data to be – data based (solely) on subjects surveyed leaving the polling place.

### Data Used in This Report

For this report, I use data that apparently are based solely on subjects surveyed leaving the polling place. These data were reportedly not meant to be released directly to the public,<sup>10</sup> and were reportedly available to late evening Election Night viewers only because a computer glitch prevented NEP from making updates sometime around 8:30 p.m. that night.<sup>11</sup> They were collected by Jonathon Simon, a former political survey research analyst, and are corroborated by saved screen shots (see Figure 1). I happened to have ten exit poll internet pages stored in my computer memory, and in each case, his figures are identical to mine. The numbers are also roughly consistent with those released elsewhere (Appendix C shows *Slate* numbers at 7:28 EST).

To derive the “predicted values” used in Tables 1 & 4, I combine the male and female vote, weighted for their percentage of the electorate. Ohio exit poll data (Figure 1) indicates that 51% of men and 53% of women voted for Kerry. Since the electorate is 47% male/53% female, Kerry's overall share of the exit poll was calculated as  $(51\% \times 47\%) + (53\% \times 53\%)$  or 52.1%.<sup>12</sup> Doing the same for calculations for other battleground states and comparing these numbers with final tallies (*New York Times*, Nov. 7), I completed the columns in Tables 1 & 4.

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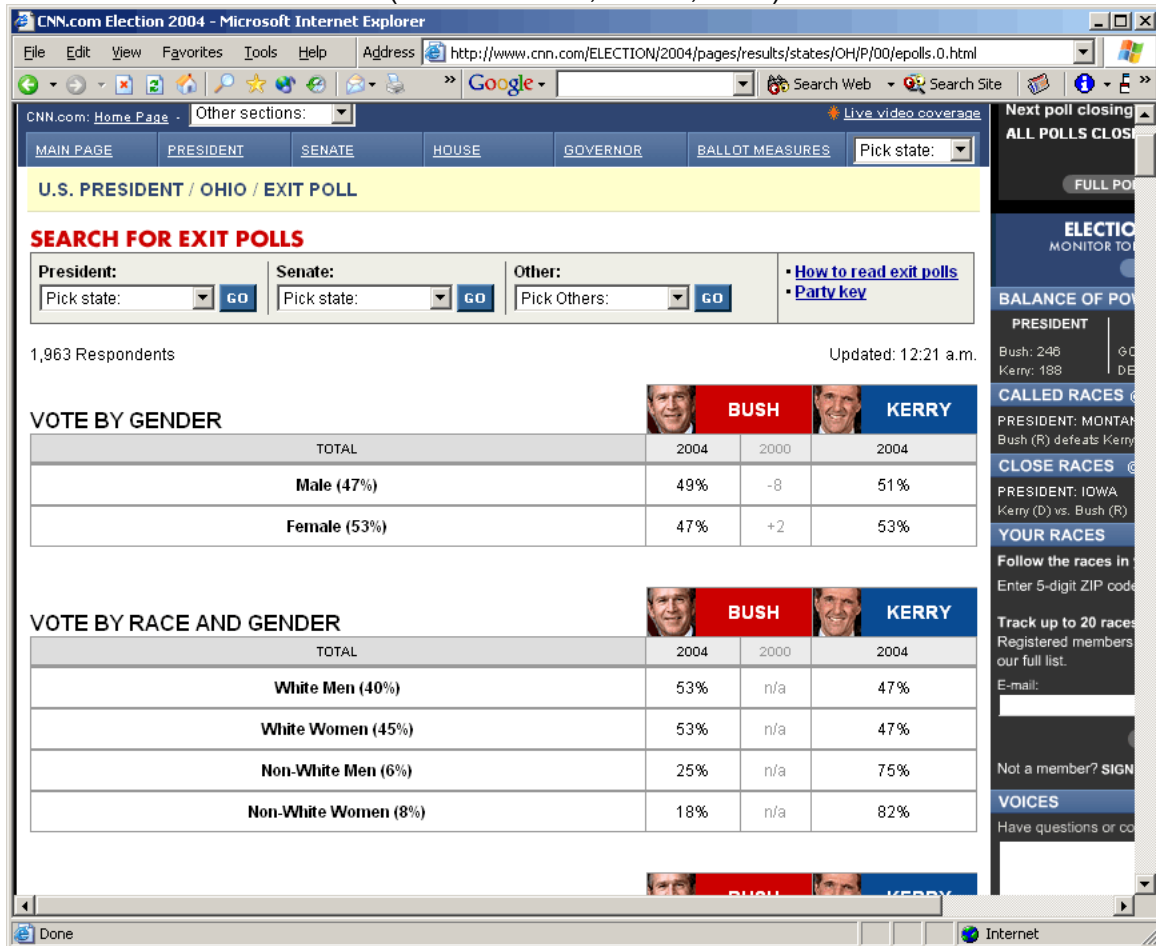
<sup>9</sup> Tom Zeller, Jr. "Vote Fraud Theories, Spread by Blogs, Are Quickly Buried," *New York Times* (Front page); John Schwartz, "Mostly Good Reviews for Electronic Voting," *New York Times*; Keith Olbermann MSNBC Countdown. All three on November 12, 2004.

<sup>10</sup> Martin Plissner, "In Defense of Exit Polls: You just don't know how to use them" *Slate* Thursday, Nov. 4, 2004

<sup>11</sup> Richard Morin, "New Woes Surface in Use of Estimates," *Washington Post*, Thurs, Nov. 4, 2004; Page A29

<sup>12</sup> Among the limitations of the CNN exit poll data is the lack of significant digits. Rounding errors mean that exit poll numbers for individual state analyses could be off by up to .5. This is unlikely because it comes from two groups, male and female, and it's unlikely that they are both rounded that much in the same direction. Regardless, the strength of the finding is such that even if all numbers had been rounded the full .5 in an unfavorable direction, the basic finding would still hold.

**Figure 1. CNN web page with apparently “uncorrected” exit poll data (12:21 am Wed, Nov. 3, 2004)**



**Is the Data Valid?**

Ruy Teixeira and others have rejected these data as unweighted, meaning that they have not been adjusted to appropriately weight demographic groups pollsters knowingly under- or over-sampled,<sup>13</sup> but that would seem very unlikely. NEP’s predecessor, Voter News Service, warns in bold letters in its 2000 Methodology statement never to use unweighted data (see Appendix A). It makes no sense *ever* to distribute unweighted data to anyone. Pollsters want to get it right. Their customers are depending on it. Broadcasters want to be alerted to probable outcomes, so as to plan their coverage accordingly (e.g., pre-writing stories so they could be completed shortly after

<sup>13</sup> Ruy Teixeira: <http://www.emergingdemocraticmajorityweblog.com/donkeyrising/>. Pollsters typically oversample minorities so that they have a sufficient sample size of important demographic groups, but then they negatively weight respondents in these groups to adjust for their actual percentage of the electorate.

poll-closings, assigning top reporters to winners' headquarters, being prepared for when concession or victory speeches might be forthcoming, etc...). In this case, subscribers were very surprised. Editors and network managers had to scramble, and journalists complained that they had to rewrite their lead stories.

It's likewise possible that the data were already partially calibrated to tallies, but given the news story and the abrupt change at 1:30 am, that too seems unlikely. If, in fact, the data already had been partially calibrated, however, it would mean that the pure exit poll numbers favored Kerry to an even greater extent.

In summary, I'd rather have NEP data, but no one is going to see those until well into 2005 (if then). That said, I believe this CNN data are good, and can be used to generate some highly suggestive findings.

### On (Uncorrected) Exit Polls

There are many challenges when conducting an exit poll, several of which potentially might have caused errors that would have resulted in Election Day discrepancies. I'll discuss these at length in a later section of this report (along with a discussion of potential count errors), but at this point, I want to validate curiosity and concern with this issue.

In general, we have reason to believe that exit polls, by which I mean *uncorrected* exit polls, are reasonably accurate survey instruments. Exit polls are surveys taken of representative respondents from the overall voting population. Both the logic behind them and experience suggest that these surveys should be able to predict overall results within statistical limits. It's relatively easy to get a representative sample, and there is no problem with figuring out who is actually going to vote or how they will vote.

In Germany, the minute the polls close, polling agencies release prognoses that have proven highly reliable. In the three most recent national elections, poll percentages diverged from official counts by only **0.26%** on average (Table 2). If we look at the coalitions, so as to make it more

comparable to the American two-party system, we get a similar result: **0.27%** average differential from tallied results. Polls have been almost as accurate for the German vote in the European Parliament Elections (Table 3), averaging **0.44%** differential from tallied results over the past three elections.

**Table 2<sup>14</sup>: Exit poll vs Tallies in German National Elections**

Parties	2002 predicted	2002 tallied	2002 diff	1998 predicted	1998 tallied	1998 diff	1994 predicted	1994 tallied	1994 diff	average dif
<b>SPD</b>	38.0%	38.5%	0.5%	41.0%	40.9%	0.5%	36.5%	36.4%	0.1%	
<b>CDU/CSU</b>	38.0%	38.5%	0.5%	35.0%	35.2%	0.5%	42.0%	41.4%	0.6%	
<b>Green</b>	9.0%	8.6%	0.4%	6.5%	6.7%	0.4%	7.0%	7.3%	0.3%	
<b>FDP</b>	7.5%	7.4%	0.4%	6.5%	6.2%	0.4%	7.0%	6.9%	0.1%	
<b>PDS</b>	4.0%	4.0%	0.4%	5.0%	5.1%	0.4%	4.0%	4.4%	0.4%	
Rest	9.0%	8.6%		6.0%	5.9%		3.5%	3.6%		
<b>Average differential</b>			<b>0.30%</b>			<b>0.18%</b>			<b>0.30%</b>	<b>0.26%</b>
<b>Coalitions</b>										
<b>SPD/Green</b>	47.0%	47.1%	0.1%	47.5%	47.6%	47.5%	43.5%	43.7%	0.2%	
<b>CU/FDPI</b>	45.5%	45.9%	0.4%	41.5%	41.4%	0.1%	49.0%	48.3%	0.7%	
<b>Average differential</b>			<b>0.25%</b>			<b>0.10%</b>			<b>0.45%</b>	<b>0.27%</b>

**Table 3: Exit poll vs Tallies in European Parliament Elections (only German part)**

Parties	2004 predicted	2004 tallied	2004 diff	1999 predicted	1999 tallied	1999 diff	1994 predicted	1998 tallied	1998 diff	average dif
<b>SPD</b>	22.0%	21.5%	0.5%	31.0%	30.7%	0.3%	33.0%	32.2%	0.8%	
<b>CDU/CSU</b>	45.5%	44.5%	1.0%	48.0%	48.7%	0.7%	40.5%	38.8%	1.7%	
<b>Green</b>	11.5%	11.9%	0.4%	7.0%	6.4%	0.6%	10.0%	10.1%	0.1%	
<b>FDP</b>	6.0%	6.1%	0.1%	3.0%	3.0%	0.0%	4.0%	4.1%	0.1%	
<b>PDS</b>	6.0%	6.1%	0.1%	6.0%	5.8%	0.2%	4.5%	4.7%	0.2%	
<b>REP</b>							3.5%	3.9%	0.4%	
Rest	9.0%	9.8%		5.0%	5.4%		4.5%	6.2%		
<b>Average differential</b>			<b>0.42%</b>			<b>0.36%</b>			<b>0.55%</b>	<b>0.44%</b>

In the US, exit polls have also been quite precise. In particular, students at BYU have been conducting Utah exit polls since 1982.<sup>15</sup> They write:

... results are very precise; In the 2003 Salt Lake [City] mayoral race, the KBYU/Utah Colleges Exit Poll predicted 53.8 percent of the vote for Rocky Anderson and 46.2 percent for Frank Pignanelli. In the actual vote, Anderson carried 54 percent of the vote to Pignanelli's 46 percent.

14 Source: Election data: <http://www.bundeswahlleiter.de/> (English: [http://www.bundeswahlleiter.de/wahlen/e/index\\_e.htm](http://www.bundeswahlleiter.de/wahlen/e/index_e.htm)) Prognoses: [www.forschungsgruppe.de](http://www.forschungsgruppe.de) Polling data also can be found at [http://de.wikipedia.org/wiki/Prognosen/Hochrechnungen\\_der\\_Bundestagswahl\\_2002](http://de.wikipedia.org/wiki/Prognosen/Hochrechnungen_der_Bundestagswahl_2002) (gives the predictions of another polling company for the 2002 election; it's predictions are in all cases within 1% of ZDF). I'd like to thank Dr. Andreas M. Wuest, Michael Morrissey, Kurt Gloos and Lars Vinx for their help in compiling this data.

15 <http://exitpoll.byu.edu/2004results.asp>. Aside from an LA Times poll, for which I could not determine whether or not the data was corrected, this was the only other exit poll conducted on the 2004 presidential election as far as I have been able to determine.

True to their word, predictions in this year's contests were quite accurate. In the Utah presidential vote, for example, they predicted Bush 70.8%, Kerry 26.5%. The actual was Bush 71.1%, Kerry 26.4%. Consistently accurate exit poll predictions from student volunteers, including in this presidential election, suggest we should expect accuracy, within statistical limits, from the world's most professional exit polling enterprise.

Exit polls have been widely used to verify elections. When Mexico sought legitimacy as a modernizing democracy in 1994, Carlos Salinas instituted reforms designed to ensure fair elections, and central among these were exit polls.<sup>16</sup> Exit pollsters were hired again for the next Presidential election in 2000,<sup>17</sup> and, not coincidentally, it was the first loss for the Institutional Revolutionary Party (PRI) in its 72 year history.

In Russia, and throughout the former Soviet block, exit polls have been used to verify elections. Last fall, international foundations sponsored an exit poll in the former Soviet Republic of Georgia during a parliamentary election. On Election Day, the pollsters projected a victory for the main opposition party. When the sitting government announced that its own slate of candidates had won, supporters of the opposition stormed the Parliament, and the president, Eduard A. Shevardnadze, resigned under pressure from the United States and Russia.<sup>18</sup>

## **Statistical Analysis of the Three Critical Battleground States: Ruling Out Random Error**

### **Three Critical Battleground States**

The conventional wisdom going into the election was that three critical states would likely determine who would win the Presidential election -- Ohio, Pennsylvania, and Florida. Typical analyst comments:

Since Election 2000, Republicans and Democrats have banked their aspirations on an electoral trinity: Florida, Pennsylvania and Ohio. As the Big Three goes, so goes the nation.

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<sup>16</sup> Paul B. Carroll, Dianne Solis. "Zedillo's apparently clean win at polls diminishes threat of Mexican unrest." *The Wall Street Journal* August 23, 1994 pA2

<sup>17</sup> Rebeca Rodriguez U.S. political consultants signed to conduct exit poll in Mexico. *Knight Ridder Newspapers*, June 16, 2000

<sup>18</sup> Martin Plissner, Exit Polls to Protect the Vote, *New York Times* 10/17/04

- David Paul Kuhn, CBS News: High-Stakes Battle For The Big 3” Oct. 26, 2004

Conventional wisdom for months, including RCP's, had been that whoever won two of the "big three" Ohio, Pennsylvania and Florida would almost certainly become President.

- Real Clear Politics: [posting 10/28/04](#)

The accepted wisdom is that whoever wins two out of the three states of Ohio, Pennsylvania and Florida will win the election.

- Rob Watson, BBC News: October 28, 2004

The numbers and logic were straightforward. Of the other battleground states: Michigan and Minnesota always leaned Democratic, Colorado and Nevada Republican. Iowa, New Hampshire and New Mexico don't have many electoral votes. Wisconsin has a long tradition as a liberal state, and only 10 electoral votes compared to 20, 21, and 29 for the big three.

The campaigns themselves apparently agreed. Ohio, Pennsylvania, and Florida were the three states the candidates visited most, and in which they spent the most money.<sup>19</sup>

The conventional wisdom proved correct. Bush won two of the three and ascended to electoral victory by virtue of that. In each of these states, however, exit polls differed considerably from recorded tallies (Table 4).

**Table 4: Predicted vs. tallied percentages in the three critical battleground states**

	Sample size	Bush predicted	Kerry predicted	Predicted differential	Bush tallied	Kerry tallied	Tallied differential	Tallied vs. predicted
Florida	2846	49.8%	49.7%	Bush 0.1 <sup>20</sup>	52.1%	47.1%	Bush 5.0	Bush 4.9
Ohio	1963	47.9%	52.1%	Kerry 4.2	51.0%	48.5%	Bush 2.5	Bush 6.7
Pennsylvania	1930	45.4%	54.1%	Kerry 8.7	48.6%	50.8%	Kerry 2.2	Bush 6.5

## A Statistical Anomaly?

A basic question to ask on looking at such a discrepancy is whether it is just a statistical anomaly. It can happen, for example, that a fair coin tossed ten times will land heads each time, but it doesn't happen often (1 out of 256 times). If we witness this, we will at least suspect that the coin might be adulterated, especially if the stakes are high and we are not permitted to inspect the coin carefully.

<sup>19</sup> See stories cited above.

<sup>20</sup> Earlier exit polls, including one released by Slate at 7:28 EST, 28 minutes after the Florida polls closed showed Kerry leading 50% to 49% (Appendix C)

Statistical significance, which means that the discrepancy is such that it is unlikely to occur by chance, depends on four factors – the size of the discrepancy, the sample size, sample characteristics, and the level of significance (just how unlikely does it have to be?).<sup>21</sup> Table 4 provides sample size and discrepancy. For statistical purposes, these samples are quite large. Two thousand or so respondents is roughly the size of most national polls.

Without access to the data and methodology, we cannot model the sample characteristics precisely. But we do know the general procedures by which exit polls are conducted. Appendix A provides the 2000 Presidential election exit poll methodology and a bibliography of articles on the process from that and other elections. Based on these we can make a reasonable approximation.

A random sample of a population can be modeled as a normal distribution curve. Exit polls, however, are not random samples. To avoid prohibitive expense, exit poll samples are clustered, which means that precincts, rather than individuals, are randomly selected. This increases variance and thus the margin of error because of the possibility that precinct voters share similar characteristics that differentiate them from the rest of the state in ways that past voting behavior would not predict.

Pollsters also use a counterbalancing process that decreases variance – stratification. Identifying voters by key characteristics that predict voting behavior (race, sex, age, income, ethnicity, religion, party affiliation, etc...) ensures that the sample is representative of the overall population, either by seeking out subjects with specific demographic characteristics and/or weighting groups depending on their representation in the sample compared with that of the overall voting population. By getting samples in which minorities are over-represented (but subsequently negatively weighted), pollsters can ensure adequate sample sizes of each of these representative subgroups. Knowing exactly how much to weight over- or under-represented population depends on an accurate knowledge of overall demographics of the electorate.

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<sup>21</sup> (Apologies to those who are well versed in statistical inference. Most readers of this paper are not, so I provide much more explanation than I would for a purely academic reader.)

Historical data, census data, and registration roles, can be used to compliment sampling site counts to try to accurately weight the sample.

An early draft based of this paper, based on an assumption that the effects stratification of could balance the effects of clustering generated a headline grabbing probability of 250,000,000-to-one odds that exit poll deviations from counts could be due to chance or random error. In this analysis, I use more conservative estimates. An analysis of the 1996 exit polls estimated that the cluster sample design adds "a 30 percent increase in the sampling error computed under the assumption of simple random sampling" (Merkle and Edelman, 2000, p. 72). That study is particularly apt because the 1996 state exit polls involved roughly the same number of precincts (1,468) as this year's polls (1,480).<sup>22</sup> In the analysis below, I also conservatively assume no counterbalancing effects due to stratification. Although in principal, pollsters weight over- and under-sampled groups, thereby ensuring a more representative sample than chance alone would dictate, there is no magic formula for exactly what weight to assign a group. The only measure of the demographics of actual voters on Election Day is the exit poll itself.

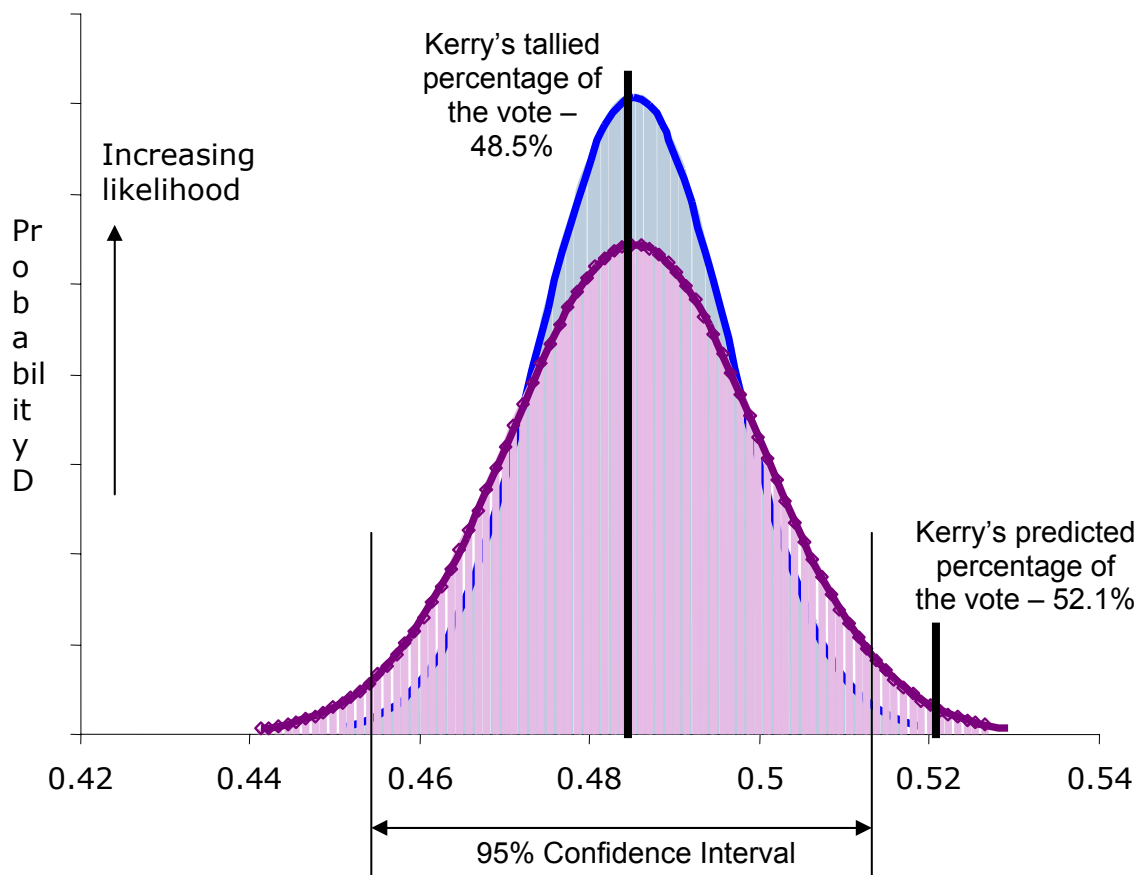
Figure 2 depicts the resulting distribution curve for samples of 1,936 randomly selected respondents from approximately 40 randomly selected precincts in a state in which 48.5% of the vote went for Kerry. The thin blue density curve is that of a simple random sample; the wider purple curve is of a clustered sample with no stratification. The horizontal double arrow below the curve indicates the poll's statistical margin of error, the corresponding 95% confidence interval.<sup>23</sup> If one hundred unbiased samples were drawn from this population, we would expect that in 95 (on average), Kerry would poll between 45.6% and 51.4%. And because half of the 1-in-20 cases that fall outside the interval would be low rather than high, 97.5% of the time we

<sup>22</sup> <http://www.exit-poll.net/faq.html#a7>

<sup>23</sup> To determine the margin of error, calculate the standard error of a random sample using the formula  $\sqrt{\frac{p(1-p)}{N}}$  where p = Kerry percentage of the vote and N is the sample size. (.0113). To adjust for the fact that this is a clustered sample, add 30% (.01466 or 1.47%). Sixty-eight percent of the time, a prediction from a sample this size would be within one standard error, then . Ninety-five percent of the time, it will be within 1.96 standard errors (2.87% in this case).

would expect Kerry to poll no more than 51.4%. It turns out that the likelihood that Kerry would poll 52.1% from a population in which he receives only 48.5% of the vote is less than one-in-one-hundred (.0073).

**Figure 2. Statistical prediction of Kerry's true percentage of the vote in Ohio**



Conducting the same analysis for Florida, we find that Kerry's poll prediction of 49.7% of the vote is likewise outside the 95% confidence interval. Given a population in which he receives only 47.1% of the vote, the chances that he would poll 49.7% out of 2846 respondent in an exit poll with no systematic error is less than two-in-one-hundred (.0164). Kerry's poll numbers are outside the 95% confidence interval as well in the third critical battleground state, Pennsylvania. Although he did carry the state, the likelihood that an exit poll would predict 54.1%, given 50.8% support of the electorate is just slightly more than one-in-one-hundred (.0126).

Assuming independent state polls with no systematic bias, the odds against any two of these statistical anomalies occurring together is between 5,000:1 and 10,000:1. (20-40 times more improbable than ten straight heads from a fair coin) The odds against all three occurring together are 662,000-to-one. As much as we can say in social science that something is impossible, it is impossible that the discrepancies between predicted and actual vote counts in the three critical battleground states of the 2004 election could have been due to chance or random error.

## If Not Random Error, then What?

Given that the bias could not have been produced by random error, the big question is what caused it: To get to the heart of the matter: Was it systematic error in the polls or measurement error in the count? Many theories have been offered on each side. But before I take the question up in earnest, some non-scientific considerations should be considered.

First, that these are not just two alternative hypotheses to a purely scientific inquiry. One of the alternatives, if correct, could have enormous consequences in politics and the national psyche (but then again it might now). There are several good reasons to presume that it must have been polling error rather than count error, but there are also some practical reasons for not even going into this inquiry: (1) Count error is an accusation; the election was stolen; whereas polling error is a mere technical shortcoming. One should make such accusations lightly. (2) It's a counter-productive attitude. We're a forward-looking people: What's done is done. Accept reality and move on. (3) If we cannot democratically choose the President, if the election was "stolen" (again!), well, that's a frightening (paranoid?) thought (and what could we do about it?)

That said, I'm going to ignore these practical considerations – which I believe has crippled intelligent inquiry on the subject – and treat it as a purely scientific investigation. The media has had a virtual blackout on discussion of this issue, which has produced waves of angst for the bloggers on the left, and leading a great many apparently reasonable people to don a "tin foil hat."<sup>24</sup> I'll justify this further at the end of the story, but the bottom line is that it's arguably the most important question in the world right now, and I'd like to know what happened.

## The Big Picture

I look at specific details momentarily, but let's begin by looking

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<sup>24</sup> [Tin Foil Hat](http://c2.com/cgi/wiki?TinFoilHat) Typically made with aluminum foil, this head-gear protects the wearer's brain from the effects of mind control and can block the intrusions of mind readers. An effective and low-cost solution to combating mind-control, it is popular among less wealthy paranoids. <<http://c2.com/cgi/wiki?TinFoilHat>>

## Had to Be the Polls

(1) Warren Mitofsky has basically come and said it was polling error and not a count error. This would seem to go against his own self-interest.

(2) Exit Polling is complicated: There is a great deal that can go wrong. From Marc Blumenthal:

It is true that exit polls have no problem identifying "likely voters," but they trade that problem for a huge set of logistical challenges. The national exit polls hire 1500 interviewers for just one day of work every two years and deploy them to randomly chosen precincts nationwide. Telephone surveys can train and supervise interviewers in a central facility. No such luck for exit polls. They depend on interviewers with relatively little prior experience or training. The year, in fact, NEP conducted most of its interviewer training by telephone. Yes, exit pollsters can easily draw a statistically valid sample of *precincts*, but some interviewers will inevitably fail to show up for work on Election Day. NEP tries to deploy substitutes to fill the gaps, but some precincts inevitably go uncovered. In 2000, 16 percent of sampled precincts were uncovered (Konner, 2004; although this statistic may have applied to those covering both the exit poll and sampled "key precincts").

Next, consider the challenges facing each interviewer as they attempt to randomly select voters emerging from the polling place (some of which I learned about in recent emails from NEP interviewers): Interviewers typically work each precinct alone, soliciting participation from every "nth" voter to exit the polling place (the "n" interval is typically between 3 and 5). But these interviewers must also break away to tabulate responses and call in results three separate times during the day. They make their last call about an hour before the polls close and then stop interviewing altogether. If too many voters emerge from the polling place at once, they will miss some potential respondents. If polling place officials are not cooperative, the interviewer may have to stand so far from the polling place that they cannot intercept voters or are lost in the inevitable gaggle of electioneering partisans. If several precincts vote at single polling place, the interviewers have no way to identify voters from their specifically selected precinct and samples from all of those who vote at that polling place.

All of these real world factors make it hard, not easy, for an exit poll to get a "statistically valid sample." That's why Warren Mitofsky, the NEP official who helped invent the exit poll, describes them as "blunt instruments" and why Joan Konner, dean of the Columbia School of Journalism concluded in a review last year for *Public Opinion Quarterly* that "exit polls do not always reflect the final margin" (Konner, 2000, p. 10).

(3) Response rates have been declining. In Russia and Mexico response rates approach 90% (Mitkofsky – Personal communication); in the US, they have been declining toward 50%. In social science, we think that 50% response rate is pretty good, but we usually cannot know for what the skew is for non-respondents. A response rate differential of 55% Kerry supporters responding vs. 45% Bush voters responding could explain the discrepancy.

## Exit Polls are Accurate; Dispassionate. This one was well done. No independent evidence of error

On the other hand, exit polls have a good history. Even in the famous Florida fiasco of 2000, the exit polls had it right. Whatever the actual vote count really was or would have been, a clear majority of Florida's voters intended to vote for Gore.

The guys who ran this are the best in the world and *Slate* reports that Mitofsky and Lenski insist that the polls were perfectly fine.<sup>25 26</sup> Three weeks after the election, only qualified explanations have been offered and no evidence forthcoming.<sup>27</sup> Unlike count error, here the only motivation is to get it right. Unlike count error, there is no independent evidence (yet) of error.

## The Big Picture: The Count Couldn't be (Significantly) Wrong

(1) This was a competitive election. The Democrats reportedly had 20,000 lawyers, and precinct workers in every district. Just how could the Republicans even do it?.

(2) Many people would have had to be complicit; on a grand scale, presumably many people would have been complicit, and

(3) No one in a position of prominence has come forth. Kerry or other prominent Democrats, or others in a position to know: reporters who covered the election closely and the pollsters themselves seem to say so (their wording is very careful, though).

(4) Lots of accusations, but three weeks later we've uncovered nothing but a few random mistakes, nothing of the sort that could add up to a stolen election.

## Could the Vote Be Wrong?

Motivation: If they could steal votes, wouldn't they?

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25 Martin Plissner "In Defense of Exit Polls: You just don't know how to use them. *Slate* Thursday, Nov. 4, 2004

26 Jack Shafer, "The official excuses for the bad exit poll numbers don't cut it." *Slate* Friday, Nov. 5, 2004, 9:23 PM PT

27 Warren Mitofsky, personal communication, November 18, 2004. Mitofsky himself says, "We are still investigating the source of the exit poll problem" "I personally believe that our report will show that the source of the discrepancy was disproportionate Bush-voter refusal-to-participate."

Scores of allegations, the history (especially in Florida), lack of safeguards with electronic voting, the conflict-of-interest in election oversight (especially in Ohio, but also in Florida), t, etc..., etc... (and now the Berkeley study).

## Polling Error?

Several polling error explanations could cause the Red Shift, but first let's dispense with the implausible explanations put forth – and unquestioningly accepted by the media in the first week after the election.

### Explanations Without Merit

**It's Just a Poll. (implied: polls can be wrong)**<sup>28</sup> Well it's true (of course) that it's just a poll, but, as I have documented, the evidence and logic on exit polls suggest that we have reason to believe they are accurate within statistical limits. In the absence of systematic skew or count error, they could not have been as far off as they were.

**Gender Bias**<sup>29</sup> CNN and others released data presenting male and female preferences separately, thus automatically weighting sex appropriately. It doesn't matter if the sample was 90% female; they would only be weighted for 52% of the vote.

### Unlikely to Cause Skew

**Under-representation of Republican constituencies.**<sup>30</sup> Other explanations put forth by the *Washington Post* charge that samples may have included too few Westerners, not enough Republicans, etc ...” Random imbalances are part of normal sampling error. A random sample would result in the poll precision and confidence intervals that I reported. Under such conditions, Republicans, westerners, etc., are equally (un)likely to be over- or under-represented. Imprecise representation is incorporated within the margin of error. That's why we have the concept of probability densities, margin of error, etc.... If you could choose a perfectly representative

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28 Martin Plissner “In Defense of Exit Polls: You just don't know how to use them. *Slate* Thursday, Nov. 4, 2004

29 Richard Morin, “New Woes Surface in Use of Estimates” *Washington Post*, Thurs, Nov. 4, 2004; Page A29

30 Richard Morin, “New Woes Surface in Use of Estimates” *Washington Post*, Thurs, Nov. 4, 2004; Page A29

sample, you could predict outcomes precisely. In principle, the samples should be better than random; techniques to ensure sample representativeness make polls more accurate than a purely random sample, thus making the observed discrepancies even more unlikely than my analysis indicates. That said, it is possible if groups were weighted incorrectly, i.e., the pollsters assumed that a representative sample includes 15% African-Americans when the overall electorate was only 13% African-American that could produce some skew. These differences are unlikely to be more than a percent or two off because of multiple sources of data, most important is the actual observed turnout, but this is complemented by voting demographics of previous elections, registration roles, and census data.

**Time-of-Day Bias.** A widely accepted source of error was Time-of-Day Bias, supposedly an early voter bias in the polls. Michael Barone, Senior Editor of US News & World Report, who ironically had written just a few months before an impassioned piece about how the exit polls were right and the count was wrong in Venezuela<sup>31</sup>, unquestioningly accepted this, and concluded:

Love is stronger than hate. That is the lesson of the 2004 election results. Millions of Democrats and leftists have been seething with hatred for George W. Bush for years, and many of them lined up before the polls opened to cast their votes against him--one reason, apparently, that the exit poll results turned out to favor Democrats more than did the actual results. But Republicans full of love, or at least affection, for George W. Bush turned out steadily later in the day or sent in their ballots days before.<sup>32</sup>

This paper does not refer to mid-day reports, but rather end-of-day data, which happened to still be available at midnight. But even if there were a time bias in the CNN data that I have used, is there any reason to believe that early votes would be skewed Democrat? So much of what the media accepted as explanations the data were nothing more than hypotheses.

## Count Errors?

There are many who say that it's over, move on.

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<sup>31</sup> Michael Barone "Exit polls in Venezuela" *U.S. News & World Report*, 8/20/04

<sup>32</sup> Michael Barone "The 51 percent nation" *U.S. News & World Report*, Nov 15, 2004 v137 i17 p33

also important themselves

Sampling error, have you drawn from

particular, is there some systematic polling error

### Polling Error

The official story is polling error. I'll take up the issue of media coverage in a later section, but for now let's just put up the original official accounts. The directors of the polls have reportedly "debunked" the possibility of

Several theories have been put forward regarding polling error, som

### Official Explanations

No major media outlet

One of the few people close to the pollsters to offer an explanation early on was Martin Plissner, former executive political director of CBS News (and self-described close friend of the pollsters), who identifies three problems with the polls:

The pollsters who work outside the polling stations often have problems with officials who want to limit access to voters. Unless the interviews have sampled the entire day's voters, the results can be demographically and hence politically skewed. Finally, it is of course a poll, not a set of actual recorded votes like those in the precinct samples collected after the polls close.<sup>33</sup>

Regarding the first problem, Jack Shafer of *Slate* observes:

... exit pollsters always encounter overzealous election officials enforcing electioneering laws. Can we really believe that a significant number of the 1,480 exit poll precincts in 50 states and the District of Columbia that Edison/Mitofsky surveyed on Election Day were so affected? And in sufficient numbers to bend state-by-state exit polls in Kerry's favor?<sup>34</sup>

If in fact, pollsters have a limited sample of voters from a given precinct, they can weight the voters who are polled from that precinct or demographically similar precincts accordingly.

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33 Martin Plissner "In Defense of Exit Polls: You just don't know how to use them. *Slate* Thursday, Nov. 4, 2004

34 Jack Shafer, "The official excuses for the bad exit poll numbers don't cut it." *Slate* Friday, Nov. 5, 2004, 9:23 PM PT

Regarding time of day variation, this paper does not refer to mid-day reports, but rather end-of-day data, which happened to still be available at midnight. But even if there were an early voter bias in the CNN data that I have used, is there any reason to believe that early votes would be skewed Democrat?

Regarding the last ditch argument that it's just a poll, its true (of course), but, as I have documented, the evidence and logic on exit polls suggest that we have reason to believe they are accurate within statistical limits.

### **Under-representation?**

Other explanations put forth by the *Washington Post* charge that samples may have included too many women, too few Westerners, not enough Republicans, etc ...” The issue of male/female ratio is irrelevant. CNN and others released data presenting male and female preferences separately, thus automatically weighting sex appropriately.

Other potential random imbalances are part of normal sampling error. A random sample would result in the poll precision and confidence intervals that I reported. Under such conditions, Republicans, westerners, etc., are equally (un)likely to be over- or under-represented. Imprecise representation is incorporated within the margin of error. That's why we have the concept of probability densities, margin of error, etc.... If you could choose a perfectly representative sample, you could predict outcomes precisely. Techniques to ensure sample representativeness make polls more accurate than a purely random sample, thus making the observed discrepancies even more unlikely than my analysis indicates.

### **Bush voter unwillingness to participate and other “explanations”**

More recently, Senior *Gallup Poll* Editor David W. Moore, report that Mitofsky and Lenski say that,

Kerry voters apparently were much more willing to participate in the exit poll than were Bush voters. The interviewers at each of the sample voting locations are instructed to choose voters as they exit from the voting booth -- every third, or fifth, or eighth voter -- some sequence of this sort

that is determined ahead of time. Many voters simply refuse to participate in the poll. If the refusers are disproportionately for one candidate or another, then the poll will be biased....<sup>35</sup>

The first problem with this explanation is that the pollsters make adjustments for voters who were missed or refused to be interviewed, based on their observed age, race, and sex (see Appendix A). But, OK, it is true that if Bush voters of all stripes disproportionately refuse to participate, that *could* explain exit poll error. The question is whether we have evidence to support this.

It is *conceivable* that Kerry voters were much more willing to participate in the exit poll than were Bush voters, but although it's not difficult to imagine why some Bush voters might not want to participate, it's also not difficult to imagine why some Kerry voters might not want to participate either. Likewise for the proposed early voter bias. Although it is possible to imagine Republicans not voting early ("they have to work"), it is equally possible to imagine orderly Republicans rising with the sun and doing the civic duty, while sinful Democrats sleep late and procrastinate until near poll closing time.

The problem with these explanations or even one that might have considerably more face validity (which means that it makes sense on the face of it), such as the possibility that absentee/early voters disproportionately favored Bush<sup>36</sup>, is that it is not an explanation, but rather a hypothesis. It's *apparent* that "Kerry voters were much more willing to participate in the exit poll than Bush voters" *only given several questionable assumptions*. An explanation would require independent evidence. In this case, the hypothesis *could* be tested. One possibility would be to examine discrepancies in precincts that were exit polled and in which the counts are unimpeachable, e.g., paper ballots placed in a tamper-proof box, which at the end of the day was counted in plain site of any observer who wished to see (assuming that some such precincts were in fact exit-polled). If the discrepancy in such precincts is consistent with the statewide

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35 David W. Moore, Senior Gallup Poll Editor, "Conspiracies Galore" *Gallup News Service*: November 9, 2004.

36 To the best of my knowledge, the pollsters have not offered absentee/early voters as an "explanation," presumably because they were able to predict any disproportionate support based on telephone interviews and patterns from previous elections.

discrepancy, then we have an explanation. If not, then we check that possibility off the list and move on to test other hypotheses.

## The Role of the Exit Poll

The pollsters have made clear that the purpose of their poll was not to verify the integrity of the election; they were hired by the AP-Network consortium to provide supporting data for election coverage.<sup>37</sup> In this election, however, concerns about this exit poll-count discrepancy are compounded by concerns about voting technologies, both new (especially electronic voting machines without paper trails) and old (punch card ballots still widely in use). Allegations about miscount and worse have been lighting up the Internet. In at least three cases, vote count errors have been acknowledged and corrected.<sup>38</sup> Additional sources of concern include mistabulation through “spoilage,” (as we saw in Florida in 2000, large numbers of votes are commonly lost due to imperfections in the voting process), overuse of provisional ballots, and limited access by observers to some vote tallies.<sup>39</sup>

Verifying the integrity of elections is important not only in Mexico, Venezuela, and (the former Soviet Union Republic of) Georgia. Whatever the original purpose of this particular exit poll, it could be used to help verify the integrity of this election if its data and methodology could be reviewed by independent investigators.

We've compiled a list of all the states, documenting the Using R program, we ran a comparison. Attached is a file listing the states. Attaching

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37 It's ironic that the same news organizations that have unquestioningly accepted that the exit polls “screwed up” in predictions on the Presidential election, have nevertheless drawn from those same exit polls such far reaching conclusions about moral values, the Democratic party's disconnect with the Heartland, etc ...

38 I'm sure I'm hopelessly behind in keeping up with these, but I happened to see these three: “Glitch gave Bush extra votes in Ohio” [cnn.com 11/05/04. http://www.cnn.com/2004/ALLPOLITICS/11/05/voting.problems.ap/](http://www.cnn.com/2004/ALLPOLITICS/11/05/voting.problems.ap/). There were segments on Indiana and North Carolina errors on *MSNBC's* Keith Olbermann Countdown program: [http://home.comcast.net/~karl.kaufman/countdown\\_on\\_voting\\_irregs\\_Nov12.wmv](http://home.comcast.net/~karl.kaufman/countdown_on_voting_irregs_Nov12.wmv)

39 Erica Solvig, “Warren's [Warren County, Ohio] vote tally walled off” *Cincinnati Enquirer* Friday, November 5, 2004

## Summary and Implications

In this paper, I have tried to demonstrate that:

- exit poll data are fundamentally sound,
- the deviations between exit poll predictions and vote tallies in the three critical battleground states could not have occurred strictly by chance or random error, and that
- no explanations of the discrepancy have yet been provided.

The unexplained discrepancy leaves us with two broad categories of hypotheses: the exit poll data are wrong or misleading in ways that have not yet been adequately explained, or the count is wrong. It's important that we review exit poll data and methodology and soon while the evidence is fresh, but such analyses require NEP's raw data.<sup>40</sup> Particularly useful statistical analyses would compare the "shift" in states, counties and precincts where safeguards are strong vs. those where they are suspect. Even more important, however, are investigation into the multitude of allegations and concerns about the count itself.

## Shrugging Off the Discrepancy

### Mass media disinterest

Mass media lack of interest in these concerns has been truly mystifying.<sup>41</sup> When I listened to the news Wednesday morning, I expected it would be one of the big questions, but there was almost no mention of it over the airwaves or in print.

The New York Times told us on November 5<sup>th</sup> that they obtained a report issued by the pollsters that debunked the possibility that the exit polls are right and the vote count is wrong<sup>42</sup>, but did not explain beyond that declaration how the possibility was "debunked." In fact, no

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<sup>40</sup> I contacted Warren Mitofsky, asking for access to NEP raw exit poll data; he seemed sympathetic to my request and said he would take it up with the NEP members; more recently, however, Joe Lenski wrote, "All of the exit poll data will be archived at the Roper Center at the University of Connecticut some time in early 2005. You will be able to access of the exit poll data at that point."

<sup>41</sup> Lack of interest has been interrupted only by belittling dismissal: Manuel Roig-Franzia and Dan Keating, "Latest Conspiracy Theory -- Kerry Won -- Hits the Ether" *Washington Post*, November 11, 2004 and Tom Zeller, Jr. "Vote Fraud Theories, Spread by Blogs, Are Quickly Buried" *New York Times* November 12, 2004 (Front page)

<sup>42</sup> Jim Rutenberg, "Report Says Problems Led to Skewed Surveying Data" *New York Times*, Nov. 5, 2004

evidence at all was presented of skewed survey data, nor any problem at all with the polls except that “uncorrected” data were released to the public.

### Personal Note

I sat down to write this paper on November 7, after waiting five days for the press to offer an even plausible explanation. On November 10<sup>th</sup>, I circulated to colleagues a very early draft with big bold letters on every page, saying

DRAFT – Do not circulate, reproduce, post, or cite without the express consent of the author.

Despite the warning, it was circulated all over, and I released a paper with the qualifier that it was a VERY early draft, and to let me know if it is posted or cited. (My thinking was that I would at least then know where to send revisions). For the next 10 days I received a torrent of emails from all across the country and the world – 1500 emails and counting – most of them extending thanks for documenting this discrepancy, drawing the conclusions, and asking the (obvious) questions that the media and everyone else with a public voice had been ignoring. But many have been allegations of mistabulation and worse. Three precinct workers from the Appalachian section of Ohio, for example, wrote:

360 people signed the book and 33 absentee ballots were cast for a total of 393 votes  
The Board of Election is reporting 489 votes cast in that one precinct  
WE HAVE A COPY OF THE ENTIRE POLL BOOK for this precinct.  
(other totals were hand checked)

They went to the FBI, who referred them to the Secretary of State’s office, despite the fact that the precinct workers believe that the Secretary of State’s office is culpable. (Ohio Secretary of State Kenneth Blackwell served as the state's Bush-Cheney campaign chairman this year.<sup>43</sup>)

My purpose in this paper, however, has not been to allege that Bush did not legitimately win the election, let alone explain how it could have happened. I’m frankly suspicious of these charges (what ever happened to those 20,000 Democratic lawyers?), but I would investigate it if I could. Unfortunately, I cannot even look at but a small fractions of the emails I’ve received (sorry to those who have written), and have had to get a new email account so that my students can

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<sup>43</sup> <http://www.cnn.com/2004/ALLPOLITICS/11/03/ohio.blackwell/>

reach me. The question is why isn't the media asking questions? Because no one has provided solid explanations to the public, and no one seems to be investigating, suspicion of mistabulation, fraud, and even election theft is running rampant and unchecked.

Widespread assumption of misplay undermines not only the legitimacy of the President, but faith in the foundations of the democracy. That the President did not legitimately win the election is still a very premature conclusion, but the election's unexplained exit poll discrepancies make it an unavoidable hypothesis. In this paper, I have tried to make the case that the media, academia, polling agencies, and law enforcement agencies should investigate it with a much greater sense of urgency and responsibility than they have thus far shown.

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## Appendix A: How Exit Polls are Conducted

### 2000 Voter News Service Exit Poll Methodology<sup>44</sup>

#### *METHODOLOGY STATEMENT*

The VNS exit poll was developed and conducted by Voter News Service. The exit poll results are based on interviews with a probability sample of voters exiting polling places on Election Day, 2002.

#### **Sampling**

The samples were selected in two stages. **First**, a probability sample of voting precincts within each state was selected that represents the different geographic areas across the state and the vote by party. Precincts were selected with a probability proportionate to the number of voters in each precinct. Each voter in a state had the same chance to have his or her precinct selected. There is one exception. In some states, precincts that have large minority populations were sampled at a higher rate than other precincts. The sample weighting (described below) adjusts the representation of these precincts to their correct share of the total vote. **Second**, within each precinct, voters were sampled systematically throughout the voting day at a rate that gives all voters in a precinct the same chance of being interviewed.

The National sample is a subsample of the state sample precincts. The probability of selecting these precincts was the same as if the sample had been selected at a uniform rate nationwide, with the exception that minority precincts were again selected at a higher rate.

#### **Weighting**

The exit poll results are weighted to reflect the complexity of the sampling design. That is, the weighting takes into account the different probabilities of selecting a precinct and of selecting a voter within each precinct. For example, states that were selected at a higher rate receive a smaller weight than other precincts of the same size. There is also an adjustment for voters who were missed or refused to be interviewed, which is based on their observed age, race and sex.

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44 <http://webapp.icpsr.umich.edu/cocoon/ICPSR-STUDY/03527.xml> or [http://www.ropercenter.uconn.edu/usvns2002\\_2.html](http://www.ropercenter.uconn.edu/usvns2002_2.html)

**NOTE:** THE EXIT POLL RESULTS ARE ONLY MEANINGFUL IF THEY ARE WEIGHTED. UNWEIGHTED TABULATIONS MAY BE SERIOUSLY MISLEADING AND SHOULD NOT BE USED FOR ANY REASON.

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## Website

The single best source that I have found for information on exit polling and polling in general has been "**Mystery Pollster: Demystifying the Science and Art of Political Polling**" - By Mark Blumenthal <http://www.mysterypollster.com/>. The comments are extensive, knowledgable, and usually fair. (The one notable exception is his unfairly harsh critique of the first draft of this paper.)

## Appendix B: German Exit Poll Results<sup>45</sup>

### Election German Parliament 22.09.2002

Party	Prognosis I Time 18:00	Prognosis II 18:00	Average of the two polls	Official Final Result	official vs average prognosis 1800
SPD	37	38	37.5	38.5	1.00
CDU/CSU	39	38	38.5	38.5	0.00
GRÜNE	9.5	9	9.25	8.6	-0.65
FDP	7	7.2	7.1	7.4	0.30
PDS	4.3	4.5	4.4	4	-0.40

### Election European Parliament 13.06.2004 (only German part)

Party	Prognosis Time 18:00	First Projection 18:16	Official Result 04:04	official vs 18:00 prognosis
CDU/CSU	46.5	46.3	44.5	-2.0

<sup>45</sup> This is the only data I've as yet been able to collect and review. (I'll be investigating past US and German elections, and any other exit poll data I can collect and as time permits over the next weeks.)

SPD	23	22.9	21.5	-1.5
GRÜNE	10.5	10.6	11.9	1.4
PDS	6	6	6.1	0.1
FDP	6	6	6.1	0.1

Results in per cent. Polls close at exactly 18:00.

## Appendix C: Slate Election Day Exit Poll Numbers

**press box** Media criticism

### Updated Late Afternoon Numbers

**Mucho flattering to Kerry; plus Nader makes an appearance.**

By Jack Shafer

Updated Tuesday, Nov. 2, 2004, at 4:28 PM PT

<b>Florida</b> Kerry 51 Bush 49	<b>Iowa</b> Kerry 50 Bush 49	<b>New Mexico</b> Kerry 50 Bush 48 Nader 1	<b>New York</b> Kerry 62 Bush 36 Nader 2
<b>Ohio</b> Kerry 51 Bush 49	<b>Wisconsin</b> Kerry 51 Bush 48 Nader 1	<b>Colorado</b> Kerry 49 Bush 50 Nader 1	<b>Nevada</b> Kerry 49 Bush 48 Nader 1
<b>Michigan</b> Kerry 52 Bush 46 Nader 1	<b>Minnesota</b> Kerry 52 Bush 46 Nader 2	<b>Arkansas</b> Kerry 45 Bush 54 Nader 1	<b>New Jersey</b> Kerry 54 Bush 44 Nader 1
<b>Pennsylvania</b> Kerry 53 Bush 46	<b>New Hampshire</b> Kerry 54 Bush 44 Nader 1	<b>Missouri</b> Kerry 47 Bush 52	<b>West Virginia</b> Kerry 45 Bush 54 Nader 1

Why is *Slate* running these numbers? See this morning's [piece](#)<sup>46</sup>.

<sup>46</sup> <http://slate.msn.com/id/2109053/#Post1#Post1>