What’s in a Poll?: A Biophysicist’s Meta-Analysis of the Electoral College Vote
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Understanding polls in the news can be very confusing. Nearly every day for months we have heard both national and state polls showing Bush ahead, Kerry ahead, or that one candidate has suddenly surged and overtaken the other. What is one to make of all these polls?

As a biophysicist, my field is far from politics: my job is to collect and examine laboratory data. But this cacophony of reporting made me very interested in how to read polls. I face a similar problem in my work – how to reduce complex data to a single snapshot. I started wondering: could I come up with a more accurate answer to the simple but vital question – if the election were today, who would win the Electoral College and the presidency?

First, the basics: national polls are not good at giving us the answer to this question because the results in the Electoral College are determined by fifty-one separate races. These races, not the popular vote, are the ones that count – as we learned in 2000, when Al Gore won the popular vote but lost narrowly in the Electoral College and consequently lost the presidency. Second, it’s hard to rely on any single poll because of statistical variation, and also because different pollsters may use slightly different methods. So what’s a political junkie to do?

To get a snapshot of where things stand today, I decided to do a “meta-analysis” of many polls at once, using basic tools of statistics to provide greater objectivity and precision. Data are plentiful: thanks to the work of many polling organizations, usually several polls are taken every week in each battleground state. I used dozens of recent polls (three per state), calculated a margin and standard error, and fed this into the normal distribution (the bell-shaped curve) to calculate the probability of a particular candidate winning each state. Then, I went through every possible combination of states to estimate the most likely range of outcomes in the Electoral College. I reached a couple of conclusions which may seem surprising:

**Conclusion 1: John Kerry is holding his own.** Although national polls have shown Bush and Kerry trading off the popular lead, Kerry has usually been ahead in electoral votes since late June. Of course, the race got tighter in late August in the wake of the Swift Boat ad campaign. Today, if the pollsters are right about who the likely voters are, Kerry’s expected electoral vote total is 268, a hair behind Bush’s 270. **[numbers for September 15]** Given the uncertainties in using even more than sixty polls, this is a nearly exact tie.
Conclusion 2: Big events cause big effects – and it’s now a draw. If you look at the graph you can see clear jumps linked to major events. The release of Fahrenheit 9/11, Kerry’s selection of John Edwards as a running mate, the Democratic convention, and the attacks on Kerry’s Vietnam War record all had large effects – about 30 electoral votes each.

However, here is another surprise: the Republican convention gave President Bush only 10 electoral votes. If Bush got a large bounce in popular polls, how can this be? One possible explanation can be found in Gallup and Rasmussen polls, which show that Kerry still leads Bush in battleground states. Some would say that it’s because Kerry appealed to the center, and Bush appealed to his conservative base in other states. But that’s not for me to judge – I’m just the numbers guy.

What does my analysis mean for you as a voter? It means that things are very much up in the air. Battleground state votes are precious. New Jersey, where I live, is nearly certain to go Democratic. Therefore I plan to do three things. In Pennsylvania or Ohio, where the election will likely be won or lost, I will register voters over the next three weeks. Then, as Election Day approaches, I will make phone calls and knock on doors to canvass for voters. I am voting absentee at home, so I will be free on Election Day to get out the vote. You can do these things too.

The big lesson learned from conducting this analysis is that looking at the whole body of polls can give us greater insight than looking at one poll, or even the work of one pollster. I don’t know why major news organizations don’t do this kind of synthesis and analysis. Political horserace coverage might be clearer if they did.

Thinking about data statistically may not be in the regular journalistic toolbox. But that doesn’t mean it can’t be in yours… To that end, one final piece of advice. If you want to know how the race is in your state, read three polls – then decide.

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