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THE NUMBERS GUY | SEPTEMBER 26, 2008

# Oy, a Potential Electoral Mess

The Chance of Another Deadlock Is Greater Than You Think

By CARL BIALIK



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There's a nontrivial chance -- in the ballpark of 1 in 100 -- that the presidential race will be decided in January not by the votes but instead by the incoming House of Representatives, because of an electoral tie.

That's one of the insights generated by election mathematicians who are crunching the numbers this election like never before. Political junkies can skip right past the nationwide polls and instead view the results of thousands of simulations of the election, run each day to reflect the latest statewide poll numbers. These show the probability that each candidate will win a majority of the Electoral College -- or deadlock at 269 apiece.



Review the states up for grabs, make your best guess as to which way they'll go, and see which candidate wins.

The results can be volatile and ultimately may be no better than the questionable surveys they're based on. These tools, however, are just about the best way to grasp the unwieldy Electoral College math, in which 17 quadrillion (17 followed by 15 zeros) scenarios are theoretically possible. And that's assuming that the winner really does take all in each of 48 winner-take-all states and the District of Columbia. Maine and Nebraska explicitly allow for their electors to be split, but it was in Minnesota last time around that one elector went off the

reservation and voted for John Edwards.

Of those theoretically possible scenarios, about 128 trillion lead to a 269-269 tie, according to Carnegie Mellon University computer scientist Daniel Sleator.

Enter the Electoral College simulation sites, which generally have calculated a probability of a tie ranging from just under 1% to over 3% in the past month. These include Election '08, maintained by computer scientists and mathematicians at the University of Illinois and Southern Illinois University; fivethirtyeight.com, created by a baseball-statistics researcher and Obama supporter and named after the number of Electoral College votes; and 270 to Win, used by its founder to promote his online guide to telecom rate plans.

## Numbers Guy Blog

How Likely Is an Electoral College Tie?

of Illinois at Urbana-Champaign.

A tie became plausible in 1961 when Washington, D.C., was awarded three electors to bring the total to 538. Nebraska and Maine add to the complications by awarding an elector to the winner of each of their congressional districts. Allan Keiter, founder of 270 to Win, imagines a double nightmare: "a tie caused by a split in the Nebraska electoral votes because Obama wins the Omaha district there." That could arise if Iowa and Colorado turn blue and the rest of the 2004 electoral map stays the same.

The electoral-simulation sites generally calculate each candidate's winning probability in the 50 states and Washington, D.C., using polls. Then they either simulate the election thousands of times or use a mathematical technique called dynamic programming.

The result, particularly on fivethirtyeight, is a treasure trove of data about the likely outcome of the race. You can see the probability that the national popular-vote winner loses the electoral vote (nearly 8% as of Thursday), that Sen. Obama wins the election if he loses Ohio (45%) or that the electoral map is identical to 2000's (0.85%).

"If we had a tie, I would be surprised, but I wouldn't be shocked," says Sheldon Jacobson, professor of computer science at the University

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## About Carl Bialik

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All of these numbers lend an air of certainty to what is a volatile guessing game. Last week, Sen. McCain was the betting favorite on these sites, with win probabilities in the 70s. This week, Sen. Obama's recent poll gains have reversed the potential outcome. Closer to the election, these calculations may be more meaningful.

Just before the 2004 election, Prof. Jacobson calculated that President George W. Bush had a probability of 70% to 75%. "The only way Sen. Kerry was going to win was by winning all of the toss-up states," Prof. Jacobson says.

Prescience about one election may not seem like hard proof of these techniques' validity. That is the nature of presidential-election forecasting, where a new test case emerges only quadrennially, and where a comprehensive archive of polling data is hard to find. There are more polls than ever this year, but they can vary widely -- two polls released in Iowa on the same day last week showed a tie and a 14-point Obama lead, respectively.

These tools may be most useful for pointing out possible scenarios of interest. And none is more interesting than the possibility of an electoral-college tie.

The sites can calculate only the probability that the popular vote would project to a tie. They can't take into account the possibility of a recount in close states overturning the tie, or of pressure brought to bear on electors to eschew the vote in their state. And the race will have to remain close for a tie to look realistic. Today, it does.

If electors casting their votes in December are deadlocked, the race will be thrown to the House of Representatives, where each state's newly elected delegation gets a single vote in January.

That sort of crisis could lend fuel to an attempted end-run around the Constitution: an interstate compact called the National Popular Vote bill. If states with a combined total of at least 270 electors enact the bill, then it kicks in. That would guarantee the national popular-vote winner all the electoral votes of those participating states, and therefore the election. It has been enacted in four states with a combined total of 50 electors.

A tie is theoretically possible even with a national popular vote -- but the probability in a close election is roughly one in 100 million, according to Michael Rothschild, an economist at Princeton University's Woodrow Wilson School.

You might think their intimate familiarity with the possibility of a tie and other wacky Electoral College scenarios would turn these forecasters against the institution. Instead, Prof. Jacobson and Mr. Keiter side with the traditional form of presidential elections. "Since we are the United States of America, the Electoral College system better aligns the election of the president with the will of the individual states," says Mr. Keiter of 270 to Win.

Nate Silver, the baseball researcher behind fivethirtyeight.com, demurs: "I like the electoral college for business reasons -- that is, it makes this stuff a lot more interesting to follow," he says. "But it has outlived its useful life by about 200 years."

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