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First Guys Finish First:

The Effects of Ballot Position on Election Outcomes

by

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"First Guys Finish First: The Effects of Ballot Position on Election Outcomes"

This paper presents evidence of name-order effects in balloting and the implications of such "position effects" for American democracy. Previous studies minimized the significance of name-order effects because they have focused on general elections despite the fact that Primary elections are often the only venue open to meaningful competition. Thus our finding -- that jurisdictions using a fixed ballot order benefit candidates listed first at the expense of other competitors -- is important.

We considered data from all 5,616 precincts in New York City's 1998 Democratic primary. In New York City, the order of candidates' names is rotated by precinct, providing the opportunity to assess the performance of candidates in the same contest when listed in different orders.

In 71 of 79 individual nominating contests, candidates received a greater proportion of the vote when listed first than when listed in any other position. In six of the 79 contests the advantage to first position exceeded the winner's margin of victory, suggesting that ballot position can determine election outcomes.

The 2000 presidential election shined a spotlight on a rarely-contemplated aspect of the American political system: ballot design. The format of the ballot in Palm Beach County, Florida appears to have influenced the outcome of the 2000 presidential election, in violation of (at least) two fundamental principles of democracy. First, democracy requires a "level playing field" on which no candidate holds an *a priori* advantage over others, by virtue of the placement of his name on the ballot. In the words of Wand, Herron and Brady, "Under any reasonable standard of fairness, ballot format should not determine the outcome of an election" (2000, G3). Second, under first-past-the-post rules, the candidate preferred by the most people should win an election. It is troubling when a candidate who is favored by a plurality of voters loses an election because the ballot format steers indifferent or confused voters in a particular direction.

These principles have been discussed *ad nauseum* in relation to the infamous "butterfly ballot" and the 2000 presidential election tally in Florida. They are equally relevant to another aspect of ballot format, the order in which candidates' names are listed. Political professionals have long taken for granted that the top spot on the ballot provides an advantage to the candidate whose name occupies it. In several instances, candidates have brought lawsuits to prevent their incumbent opponents from enjoying this advantage. Still, most states randomly assign one candidate in every election the top spot instead of rotating the order of candidates' names. If the conventional wisdom of the politerati is correct, this practice creates an obvious inequity in most American elections.

In this paper we test the notion that election results are influenced by the order in which candidates' names appear on the ballot. Specifically, we consider whether occupying the first position on a vertical primary ballot adds to candidates' vote tallies. We do this through a quantitative analysis of election results from the 1998 Democratic primary in New York City – a jurisdiction that rotates precinct-by-precinct the order in which candidates' names are listed on the primary ballots.

Our findings differ from significantly from the most recent and widely cited article on name-order effects (Miller and Krosnick 1998). We strongly disagree with Miller and Krosnick's conclusion that the magnitude of name-order effects are not substantively significant. We argue that

Miller and Krosnick grossly overstate the implications of their study, which only considers general elections. They offer neither evidence nor analysis of another, equally important stage of the electoral process, namely primary elections. We find that the effect of name-order on primary election outcomes is significantly larger than Miller and Krosnick's estimate for general elections. Furthermore, we find that the magnitude of name-order effects is large enough to turn the outcome in some races.

Previous Studies of Name-Order Effects

The study of name-order effects predates Miller and Krosnick's coining of the term, but most of the earlier studies are methodologically flawed. Furthermore, the literature is contradictory, with no clear patterns in the findings across studies. These works consider a wide variety of electoral contexts, including primaries for several offices in Michigan (Bain and Hecock 1957), Democratic and Republican county central committees in California (Byrne and Pueschel 1974), elections up and down the ballot in two Colorado counties (Darcy 1986), primary contests for local office in Oregon (Elverum 1983), all offices in contention in the 1992 general election in Ohio (Miller and Krosnick 1998), Los Angeles Junior College Board (Mueller 1970), Ohio state senate primaries (White 1950), and, perhaps least significant but most amusing, the election of officers for American Anthropological Association in 1951 (Gold 1952). (A survey of the ballot position literature, including studies of voting in international settings, is presented in Darcy and McAllister 1990).

Miller and Krosnick offer the most recent addition to the name-order effects literature with their 1998 article on the 1992 general election in Ohio. They outline a compelling theory of name-order effects and find evidence of widespread position effect in the 1992 Ohio general election.

We embrace the theory of name-order effects developed by Jon Krosnick and his collaborators (see Krosnick and Alwin 1987; Miller and Krosnick 1998) that draws upon Herbert Simon's "satisficing" principle and treats voting as a cognitive task. According to the theory, actors faced with a choice among alternatives will conserve resources and select the most accessible satisfactory option presented, even if it is not optimal. If choices are presented orally, as in a

telephone interview, the last option presented is most accessible and a "recency effect" is expected; if choices are presented visually, as in an election ballot, the first option presented is most accessible and a "primacy effect" is expected. As Krosnick and Miller note, "if a citizen feels compelled to vote in races regarding which he or she has no substantive bases for choice at all, he or she may simply settle for the first name listed, because no reason is apparent suggesting that the candidate is unacceptable" (1998, 294-95). Thus they predict that the magnitude of position bias depends on how many voters do not have substantive bases for choice.

Miller and Krosnick's study is not without its own methodological flaws,[1] but the most important shortcoming is their interpretation of their own findings. Miller and Krosnick find that name-order effects are statistically significant, but substantively insignificant. They conclude, "the magnitude of name-order effects observed here suggests that they have probably done little to undermine the democratic process in contemporary America" (1998, 291-92).

Miller and Krosnick dismiss the potential mischiefs of name-order effects solely on the basis of general election returns. This is wrong-headed. Indeed, Miller and Krosnick point out that name-order effects are stronger in non-partisan elections: "these effects were smaller when a cue was available to help people cast substantively meaningful votes" (1998, 312). They do not consider the possibility that name-order effects in primary elections – where partisan cues are unavailable to voters – may be large enough to indeed "undermine the democratic process."

The importance of primary elections for democracy should not be minimized. In many jurisdictions one major party enjoys a clear advantage over the other, so the only potential venue for meaningful competition is the dominant party's primary.One must understand how ballot position affects outcomes in primary elections to fully judge the extent to which assigning the top slot to a single candidate undermines the democratic process. Miller and Krosnick were thus premature in their optimistic conclusion about the innocuousness of name-order effects in balloting.

[1] Miller and Krosnick correctly criticize Bain and Hecock (1957) for using the number of voters as the "N" in their statistical tests of precinct-level data. However, in using the precinct as the basic unit of analysis Miller and Krosnick fail to weight each observation by the size of the precinct. This may not be a serious flaw if the precincts studied were of roughly uniform size, but we cannot judge that since Miller and Krosnick do not report any information about the number of voters represented in their study.

Data and Method

The data for this study consists of precinct-level election results for the 1998 Democratic primary in New York City provided by the New York City Board of Elections.[2] While candidate name-order is uniform across most of New York State, in New York City, for historical reasons, the names of candidates are rotated by precinct. That is, each candidate for each office is listed first in an equal number of small precincts. This procedure produces observational data that is as close to experimental as one can get without actually randomizing the assignment of ballot formats, thereby providing an exceptional opportunity to examine the electoral consequences of ballot position.[3]

In 1998, there were 79 contested Democratic primary elections in the City of New York. The contested offices included Governor, Lieutenant Governor, Attorney General, U.S. Senator, U.S. Representative (three districts), New York State Senator (5 districts), New York State Assembly (21 districts) and Civil Court Judge (four contests). There were also four Democratic Party offices in contention: Male District Leader (16 districts), Female District Leader (12 districts), State Committeeman (eight districts) and State Committeewoman (six districts).

Election administration is organized around State Assembly districts, each of which is divided into precincts.[4] New York City has, in total, 5,616 precincts distributed across 58 Assembly Districts (ADs). The average number of precincts per Assembly District is 92 and the average number of voters per precinct is about 83.[5]

The assignment of precincts to ballot formats is not strictly random. Each Assembly District is divided into geographically contiguous, sequentially numbered precincts. However, it

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[2] The basic unit of election administration is called an "election district" in New York City, but to avoid confusion with legislative districts we refer to them here as "precincts."

[3] The peculiar dual system resulted from a political compromise that stemmed out a court decision invalidating a 1970 statute that had granted the first ballot position to incumbent office holders (Holtzman v. Power, Court of Appeals of New York, 27 N.Y.2d 628; 261 N.E.2d 666; 1970). In its place, the state legislature imposed the rotation system. But since the "incumbent-first" rule applied only in New York City, the change to the rotation system was applied only in New York City. As a result, all primary elections conducted in New York City – even those for statewide office – rotate the order in which candidates' names are listed.

[4] Each of the five boroughs of New York City (Queens, Brooklyn, Staten Island, Manhattan and the Bronx) is a distinct county; the Assembly Districts do not cross county lines.

[5] Our data includes neither total registered voters nor total ballots cast in each ED, so we approximate the number of "voters" as the maximum number of individual ballots cast for any single office. For 70% of precincts, that office is U.S. Senate.

would be bizarre indeed if the characteristics of a precinct were related to that precinct's number. Precincts reported an average of 81.4 votes in 1998, thus neighborhoods in which voters shared characteristic (e.g., race, ethnicity) were never presented a single ballot format. Furthermore, if some characteristic is shared by the population of, say, every third precinct in a given Assembly district, that characteristic would only confound results for races with three candidates. Only the rotation of candidates in a three-person race would align with the mysterious characteristic associated with every third precinct.[6]

Our statistical analysis is very simple, but somewhat unconventional. It is customary to consider individual candidates as the recipients of votes; instead, we consider ballot positions as recipients of votes, regardless of whose name appears in them. When candidate names are rotated, each slot on the ballot (the first, second, third or fourth position) is occupied by each candidate in the same number of precincts. Each slot should therefore receive one nth of the votes in an n-candidate primary if there is no position bias. For example, in a four-person contest, such as the race for Attorney General, each position should receive 25% of the vote in the absence of position effect.[7] The sampling distribution of the vote under the null hypothesis is therefore very straightforward: the expected vote percent for first position (or any other), π, is $1/n$ and the standard error is $\frac{\sqrt{\pi(1-\pi)}}{p}$, where P is the number of observed precincts.[8] Figure 1 illustrates the sampling distributions of the expected vote for each position in the contests for Governor, Attorney General and U.S. Senator, in which there were four candidates and 5,460 precincts reporting votes. Figure 2 does the same for Lieutenant Governor, for which there were only three candidates and

[6] It would be desirable to use demographic variables to test for qualitative differences among the groups of precincts sharing ballot formats. Unfortunately, the only level for which we have demographic data is congressional district, and there is insufficient covariation between congressional district and ballot format to use census variables to evaluate differences between formats.

[7] There are slight variations in the proportion of precincts with each ballot format when one ballot format appeared in extra precincts, as when the number of precincts is not a whole multiple of the number of candidates or when a district lies in two counties. There are also slight variations in the proportion of total voters with each format, since the number of voters per precinct is not uniform. However, when we accounted for these variations our results were nearly identical to those presented here.

[8] Since precincts contain varying numbers of voters (the mean is 76 and standard deviation is 54), we weighted each observation by the number of total votes cast in the precinct.

slightly fewer precincts reporting results (P=5,442).[9] Using these parameters we conducted standard Z-tests on the observed percentages for first position.[10]

Findings

We found compelling evidence that ballot position affects candidates' vote tallies. Our findings also confirm that several variables contribute to the magnitude of position effect.

Table 1 presents the tallies for each statewide office by ballot position. For all three statewide races with four candidates, the first position received significantly more than 25% of the votes. In the Governor's race, the first position took 27.3% of the vote. In the Attorney General's race, the first position received 27.2%, and in the U.S. Senate campaign the first position received 26.8%. In the Lieutenant Governor's race, with only three candidates, the first position took 34.9% of the vote. In all four primaries, the vote for candidates in the first position significantly exceeded the position-neutral expectation of 1/n, with p-values less than .001 in two cases (Governor and Attorney General) and less than .01 in two (Lieutenant Governor and U.S. Senator).

[TABLE 1 ABOUT HERE]

The results of our analysis leave no room for doubt regarding the existence of position effect. In all four of the statewide contests, the first position fared better than the other ballot positions. We can very confidently reject the null hypothesis of no position bias in primaries for statewide office.

In elections for local office, including Congress, state legislature, judgeships and four party positions, there are naturally many fewer observed precincts. Therefore the sampling distribution of the position vote is "flatter" – that is to say, it has a larger standard error. This is illustrated in Figure 3, in which we have plotted the sampling distribution of the position vote for the four-person governor's race and the sampling distribution of a two-person local race (62 of the local 75 races

[9] There are fewer precincts in analysis of the Lieutenant Governor's race because 16 precincts reported no votes cast at all in that contest.

[10] Note that since our null hypothesis assumes fixed values of π, and, by implication, its standard error, we can assume a normal distribution. One is only required to use Student's T when the distribution parameters are estimated. Furthermore, there are enough observations such that $T \cong Z$.

were two-person contests). We have assumed 83 precincts in the local race, which is the average number of precincts reporting votes in Assembly elections. For the gubernatorial election, the 95% confidence threshold for the alternative hypothesis of primacy effects, or first-position bias, is only 26.0%, or one percent more than the expectation. For the local distribution, the 95% confidence threshold is 59.0%, or 9% more than the expectation. The statistical test for local offices is considerably more powerful, so one would not expect the results to be as dramatic as those in the statewide contests, even if the magnitude of effect is the same or greater.

Table 2 lists the vote percentage by position for the 75 contested primary elections at the local level. In 67 of the 75, the first position received more than its expected percentage of the vote. The median advantage to first position in down-ballot elections was 3.6%; the first-position effect ranged from –10.6% to 11.4%. Despite the high threshold for statistical significance, we found that in 17 of the 75 local races the first position vote was significantly higher than the expectation.

[TABLE 2 ABOUT HERE]

These observations are not mutually independent because there are many instances of overlapping districts. We only have one unique observation per precinct, but, for example, in the 54th Assembly district, precincts 30 and 31 contributed to the tallies in the contest primaries for two judgeships, U.S. House (10th CD), State Senate (17th SD), Assembly, Male District Leader and Female District Leader (all AD 54). We therefore cannot draw any clear inference about the joint significance of the results in Table 2. That is to say, we'd like to evaluate probability of finding evidence of position effect in multiple contests if there were, in fact, no systematic bias related to ballot position.

To do so, we created four precinct-level variables, votes for all down-ballot candidates in first position, votes for all such candidates in second position, votes for candidates in third position and votes for candidates in fourth position. For an example using a single precinct (precinct 1 in AD 23), see Table 3. We then created four more variables, the expected votes for each position given no positional effect. For each ballot position, this benchmark was calculated as:

$$Expected\ vote = \sum_i \frac{Total\ votes\ cast\ for\ all\ candidates\ in\ contest\ i}{Number\ of\ candidates\ in\ contest\ i}.$$

The actual calculation of the expected vote for each position is presented in Table 4. Using these computed figures, we were able to calculate both an observed and an expected vote percent,, assume a sampling distribution for each ballot slot, and test whether the observed percent were significantly greater than the expected percent. The benchmark expectation is that 45.4% of all votes in down-ballot races should be cast for first position. In reality, 47.9% of all votes were cast for first position. Given the expectation of 45.4% and 3,836 individual precincts, the probability of observing 47.9% or more is less than .001.[11]

[TABLE 3 ABOUT HERE]

Position effect and candidate advantage

We have discussed name-order bias in the abstract, referring to positions instead of candidates, for the sake of quantitative analysis. But this is not to overlook the fact that the beneficiaries of first-position effect are individual candidates. When we examined the individual candidates' vote tallies in each position, we found the same pattern. All 12 statewide candidates received "extra" votes when listed first. The political implications of position effect may be more vividly demonstrated by shifting our attention briefly to results by candidate.

Table 5, lists the vote tally for all candidates in our dataset, by the order in which their names appeared on the ballot. Among the 180 candidates, 161 received a larger percentage of the vote when listed first. For example, Eliot Spitzer, who won the Democratic nomination for Attorney General and subsequently defeated incumbent Dennis Vacco, received 39.4% of the total vote, but when listed first he captured 41.9%. The boost for individual candidates ranged from –11.6 to 14.5, with an average of 3.4, as depicted in Figure 4.

[TABLE 4 ABOUT HERE]

[FIGURE 4 ABOUT HERE]

[11] N=3,836 instead of 5,616 (the total number of precincts in New York City) because there were no contested Democratic primaries below the statewide offices in 1,780 precincts.