An Unrecognized Need for Ballot Reform
The Effects of Candidate Name Order on Election Outcomes

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JOANNE M. MILLER
MICHAEL P. TICHY

Since the firestorm that erupted nationwide on November 7th, 2000, election technologies in the United States have come under close scrutiny. A commission headed by former presidents (National Commission on Election Reform, 2001), an interuniversity consortium of academic scholars (Caltech/MIT Voting Technology Project, 2001b; see Alvarez et al., this volume), and a good many ordinary citizens have recognized and thought hard about the potentially disastrous consequences of a voting system that falls prey to errors and biases. To be sure, elections like the presidential contest of 2000, with a margin slim enough both within a state and across states to make even the smallest discrepancies in vote counts consequential, are rare indeed. So the substantial expense entailed by changing voting technology to improve accuracy may seem unjustified on financial grounds alone. But such improvement seems more clearly worthwhile in light of its potential to enhance public trust in the electoral process in America and to promote the principle of fairness at the center of American values.

Yet there is a paradox inherent in our nation's approach to the debacle of 2000. While a tremendous amount of energy is being devoted to considering and implementing costly voting reform, lurking in the shadows is another systematic bias that has been altering and will continue to alter the outcomes of many electoral contests, unchecked and unacknowledged in all the debates sparked by the decade of 2000.

In this chapter, we focus on that source of bias in an effort to pull it out of the shadows, to characterize its operation and consequences, and, we hope, to inspire people who care deeply about electoral fairness in the United States to end it. This source of bias has its roots in the basics of human psychology: The
chooses people make among alternatives are routinely influenced by the order in which the choosers consider their various options. It ought to come as no surprise that this bias influences election outcomes, as they have shown an awareness of it for at least a century. Election laws around the country nonetheless reinforce and perpetuate the bias rather than attenuate it.

The bias has a simple cause: the order of candidates' names on the ballot. For at least a century, politicians have speculated that name order matters, and most social scientists who have studied the phenomenon concluded it is real, but state legislators and courts have rarely acted to remove this source of electoral bias.

After reviewing both the speculations about name order effects and the variations in state laws and court decisions, we offer a psychological theory to explain why name order matters and present data from analyses of the 1992 Ohio elections to show that there are indeed substantial name order effects. We then report new findings on the 2000 election in three major states. Most strikingly, we find that even in the highly-publicized and hotly-contested presidential race, name order mattered.

EARLY SPECULATIONS
At least since the beginning of the last century, seasoned political observers have believed that the ordering of candidates' names on ballots has some influence on the outcomes of elections (see Darcy and McClintic 1990). For example, Woodrow Wilson (1910, p. 953) asserted:

I have seen a ballot which contained several hundred names. It was bigger than a page of newspaper and was printed in close columns as a newspaper would be. Of course, no voter who is not a trained politician, who does not know a great deal about the derivation and character and association of every nominee it contains, can vote a ticket like that with intelligence. In nine out of ten cases, he will simply mark the first name under each office, and the candidates whose names come highest in the order will be elected.

Some years later, Joseph Harris (1934, p. 181) asserted:

Much more important than the order of offices on an election ballot is the order in which the names of the candidates appear in office group ballots. This is particularly true in direct primary and nonpartisan elections, and is of most importance in cases where several persons are to be elected to the same office.

The position of a candidate on a list of candidates is of vital importance only to the candidate thus favored, especially for minor positions.

These experienced observers speculated that being listed first helps a candidate to win an election, especially when thoughtless decision-making is costly to voters: When ballots are long, many candidates are competing for the same office, voters are not well informed, or party affiliation cannot facilitate voters' selections. Under these circumstances, proposed these observers, voters may be affected by name order when making their decisions.

NAME ORDER LAWS
If the early observers were correct and name order does indeed affect the balance of votes cast, and if legislators want to see to it that election outcomes are fair and unbiased, then state laws could prescribe a system of name ordering that advantages no particular candidate. In fact, this is just what is done in Ohio. State law requires that the order of candidate names be rotated from precinct to precinct, such that each candidate is listed first in an equal number of precincts. No candidate has the privilege of a first-place listing more often than any other candidate.

Ohio is not alone in this regard. North Dakota, Montana, and Idaho carry out similar procedures, rotating from precinct to precinct or across paper ballots or counties. In races run in all counties in California, name order is rotated across assembly districts in a similar fashion. In Kansas, name order rotation is done either by precinct or by county. In all nonpartisan races in Iowa, candidates are rotated by precinct, and candidates in nonpartisan races in Arizona are rotated from paper ballot to paper ballot. Michigan rotates candidate names across precincts for nonpartisan races, and Minnesota and Nebraska rotate candidate names across ballots or precincts. Some additional states have procedures that mimic the effect of rotating candidate names, such as Arkansas, where a separate random order of candidate names is created in each county.

But that's it. Only twelve states in the United States rotate name order fully in some or all of their elections. The vast majority of states do not take any such steps to eliminate any advantage of one candidate over another in this regard. The diversity of alternative systems used is startling, as shown in the Table 4.1.

One might guess that some of the approaches not entailing name rotation are mandated by very old laws, put in place before the possibility of name order bias was recognized. In fact, some such laws were put in place very recently. Alaska required prior to 1995, for example, that candidate names be rotated on the ballot to give all candidates placement in the first position equally often. But in 1995, the state legislature amended this rule to require instead that one single randomly-determined name order be used for each race. The recommendation to make this change came from the lieutenant governor's Election Policy Transition team, which asserted that "research indicates that the order of candidates' names on American ballots does not significantly influence voters" and that using a single name order would save money and reduce the potential for voter confusion (see Sommum v. State of Alaska 1998).

What could account for this diversity of approaches? Perhaps name order doesn't actually affect election outcomes, and so no system is any better than any other system. Another possibility is that many politicians, parties, special
### TABLE 4.1 Procedure for Ordering Candidate Names in General Election

<table>
<thead>
<tr>
<th>Procedure for Ordering Names</th>
<th>State(s) Using That Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation of candidate names across ballots, across precincts, across counties, or across assembly districts.</td>
<td>Ohio, North Dakota, Montana, Idaho, Kansas, California, Iowa, Arizona, Michigan, Minnesota, Nebraska, Wyoming, Alaska, California, Illinois, Delaware, Tennessee</td>
</tr>
<tr>
<td>All candidates are listed in one order, determined randomly by a random alphabet.</td>
<td>Oregon, California, District of Columbia, Florida, Minnesota, New Mexico, Oklahoma, Rhode Island, South Dakota, Texas, Utah, Washington, West Virginia, Wisconsin, Arkansas, New Mexico, Oklahoma, New Jersey, Rhode Island, South Dakota</td>
</tr>
<tr>
<td>Democratic Party and Republican Party candidates are listed before all other candidates, in a random order generated separately by each county. List next are all candidates affiliated with other parties, in an order determined by the date on which the candidate filed to be on the ballot in the county. Finally, all candidates not affiliated with a party are listed, again in an order determined by the candidate’s filing date in each county.</td>
<td>Vermont, Hawaii, Maine, Nevada, Louisiana, Florida, Georgia, Indiana, Maryland, New Hampshire, North Carolina, Rhode Island, Wyoming, South Carolina, Delaware, Tennessee, Virginia</td>
</tr>
<tr>
<td>All candidates are listed in one order, determined randomly, either for the entire state or for each county separately.</td>
<td>Louisiana</td>
</tr>
</tbody>
</table>

#### Candidates from the major parties are listed first in a random order, followed by the remaining candidates listed in a random order, done either statewide or separately by county.

#### Candidates are listed alphabetically by candidate surname.

#### Candidates from "major" parties are listed in a random order first, followed by all other candidates in alphabetical order by candidate surname.

#### In the race for president, candidates from "major" parties (Democratic and Republican) are listed first in alphabetical order by party name, followed by all candidates affiliated with other parties, listed alphabetically by party name. Candidates must be affiliated with a party to be listed.

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### TABLE 4.1 (continued)

<table>
<thead>
<tr>
<th>Procedure for Ordering Names</th>
<th>State(s) Using That Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>All candidates are listed in one order, determined randomly by a random alphabet.</td>
<td>Massachusetts, Pennsylvania, Georgia, New York, Connecticut, Nebraska, Texas, Florida, Missouri</td>
</tr>
<tr>
<td>Democratic Party candidates are listed first; Republican Party candidates are listed second; candidates affiliated with other parties are listed next (in alphabetical order by party name); candidates unaffiliated with parties are listed last (in alphabetical order by candidate surname).</td>
<td>Arizona*</td>
</tr>
<tr>
<td>All candidates are listed in one order, determined randomly, either for the entire state or for each county separately.</td>
<td>Washington,* West Virginia</td>
</tr>
<tr>
<td>Candidates from the major parties are listed in a random order, followed by the remaining candidates listed in a random order, done either statewide or separately by county.</td>
<td>Oklahoma.<em>, Washington,</em> Utah</td>
</tr>
<tr>
<td>Candidates are listed alphabetically by candidate surname.</td>
<td>Wyoming*</td>
</tr>
<tr>
<td>Candidates from &quot;major&quot; parties are listed in a random order first, followed by all other candidates in alphabetical order by candidate surname.</td>
<td>(continued)</td>
</tr>
<tr>
<td>Procedure for Ordering Names</td>
<td>State(s) Using That Procedure</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Candidates are listed in descending order of the number of votes cast statewide for their party in the most recent race for secretary of state. Parties that did not have a candidate in that race have their candidates listed next in the order in which they filed to be listed on the ballot. Candidates not affiliated with parties are listed next, in the order in which they filed to be listed on the ballot.</td>
<td>Michigan</td>
</tr>
<tr>
<td>Major party candidates are listed in a county in descending order of the number of votes cast in the county for their party in the most recent race for secretary of state. Next are listed candidates affiliated with other parties in the order in which they filed to be on the ballot. Candidates not affiliated with any party are listed next in the order in which they filed to be on the ballot.</td>
<td>Indiana</td>
</tr>
<tr>
<td>Candidates are listed in descending order of the number of votes cast statewide for their party in the most recent race for governor or president of the United States (whichever race occurred more recently). Candidates not affiliated with parties that ran candidates in that race are listed in a random order.</td>
<td>Wisconsin*</td>
</tr>
<tr>
<td>Candidates are listed in descending order of the number of votes registered as a member of their party who participated in the most recent state general election. Following these candidates are all other candidates, listed in the order in which they qualified to be on the ballot.</td>
<td>New Hampshire*</td>
</tr>
<tr>
<td>Ordering of candidate names in nonpartisan races is left to the discretion of the election officials in each county.</td>
<td>New Jersey*</td>
</tr>
<tr>
<td>Candidates affiliated with the current governor’s party are listed first, followed by candidates affiliated with other parties (listed in descending order of the number of registered voters registered in that party in the state), followed by candidates not affiliated with a party (listed in alphabetical order by candidate surname).</td>
<td>Maryland*</td>
</tr>
<tr>
<td>Candidates from the Democratic and Republican parties are listed first in a single randomly determined order by party name, followed by candidates affiliated with “minor” parties (listed in a different single randomly determined order by party name), followed by the remaining candidates (listed in a different single randomly determined order by candidate name).</td>
<td>Colorado*</td>
</tr>
<tr>
<td>Partisan races: Candidates from the Democratic, Libertarian, and Republican parties are listed first (in alphabetical order by party name), followed by candidates not affiliated with those parties (in alphabetical order by candidate surname).</td>
<td>Alabama</td>
</tr>
<tr>
<td>Nonpartisan races: The probate judge in each county has the discretion to order names in any way.</td>
<td>Kentucky</td>
</tr>
<tr>
<td>Candidates affiliated with the party of the incumbent president of the United States are listed first, followed by the candidates affiliated with the other major party, followed by other candidates in a single randomly determined order.</td>
<td>North Carolina*</td>
</tr>
<tr>
<td>Candidates from parties with whom 5 percent or more votes are registered are listed first, alphabetically by party name. Candidates affiliated with other parties are listed next, alphabetically by party name. Candidates not affiliated with any party are listed next, alphabetically by candidate surname.</td>
<td>Missouri*</td>
</tr>
<tr>
<td>Candidates are listed in the order in which they filed to be on the ballot, with the earliest filers listed first.</td>
<td>Iowa*</td>
</tr>
<tr>
<td>Candidates affiliated with major political parties are listed first (in whatever order the county auditor of each county chooses), followed by candidates affiliated with other parties (in whichever order the county auditor chooses), followed by candidates not affiliated with any party (in whichever order).</td>
<td>Minnesota</td>
</tr>
<tr>
<td>Candidates of the four “major parties” are listed in descending order of the average number of votes cast for a candidate affiliated with their party in all of the most recent statewide elections.</td>
<td>Utah*</td>
</tr>
</tbody>
</table>

Each county clerk may order candidate names however he or she likes.
TABLE 4.1 Procedure for Ordering Candidate Names in General Election (continued)

<table>
<thead>
<tr>
<th>State</th>
<th>Using That Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mississippi</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Not all races run in this state use this procedure.

interests, and incumbents believe that name order does affect election outcomes, and the states vary in terms of whether they want to ensure fairness or protect certain interests or whether they want to expedite resources to do so. States that require name rotation invest resources to print and distribute multiple different versions of ballots, and counting of ballots is a bit more complex when varying name orders are used. These resources are more substantial when different precincts use different voting methods (i.e., same use paper ballots and others use punch cards). States that use one random or alphabetical ordering expend considerably fewer resources and take a step in the direction of fairness but nonetheless systematically advantage some candidates over others. And states that advantage incumbent parties or office holders perpetuate these partisan biases.3

DISPUTES IN COURT

In addition to Wilson (1910) and Harris (1934), mentioned earlier, another group of observers has registered concern: candidates who lost elections by small margins and candidates whose names were or would be listed on a ballot in a position other than first and who took their complaints to court (see, e.g., Bell v. Superior Court 1958, Callion v. Dauphine County Board of Election Commissioners 1970; Elliott v. Secretary of State 1946; Gould v. Groth 1975; Kasenberger v. Jackson 1958; Lillard v. Combs 1975; Weisser v. Fossel 1997). In instructive to consider the evidence presented in these cases and the court findings themselves.

Experts have testified that being first on the ballot gives an advantage of anywhere from 2.5 to 25% of the vote. Yet all expert testimony on this issue has shared this perspective. One expert testified that name order effects do not influence the outcome of political races that receive a large amount of public attention. Yet another expert argued that there was not enough evidence on which to base an opinion about name order effects.

In many cases, courts have written opinions clearly stating that candidate name order does matter. For example, the Supreme Court of Arizona ruled: "It is a commonly known and accepted fact that where there is a number of candidates for the same office, names appearing at the head of the list have a distinct advantage." (Kasenberger v. Jackson 1958).

In response to such testimony, courts have sometimes ruled that biased election procedures must be remedied. For example, in Callion v. Dauphine County Board of Election Commissioners, 1970, the United States District Court for the Northern District of Illinois, Eastern Division, ruled that Dauphine County, Illinois, must devise a system for rotating candidates' names in order to remove any bias advantaging any one candidate or party, for use in future elections. In other cases, courts acknowledged that it was possible that name order might have biased an election outcome, but based a decision not to overturn the election on direct evidence showing that the presence and magnitude of a name order effect on the election in question was probably not large enough to have altered the outcome.4

Even more strikingly, in February 2002 Los Angeles Superior Court Judge Judith Cheriun ruled that the City Clerk in Compton (California) had violated California's name ordering law in that city's 2001 race for Mayor, incorrectly listing Eric Perriroin first and incumbent Omar Bradley second. Based upon testimony about the likely magnitude of the name order effect in that race, Judge Cheriun ruled that Bradley would have won if the candidates' names had been ordered properly. The court, therefore overturned the election result and ordered that Bradley be installed in office. California's 2nd District Court of Appeal overturned Judge Cheriun's ruling on the grounds that California law did not require reversing name order, highlighting potential legal ambiguity.

In rare instances, courts have written opinions denying the existence of name order effects, but not on the basis of any evidence. For example, in New Jersey Conservative Party v. John F. Farmer et al. (1999), the court wrote:

That there is voice apathy and a malaise creeping in our electoral process may be assumed for the moment. The expected consequence of such a condition, however, would be an increasing number of registered voters staying home on election day. The poor turnout in the Republican and Democratic primaries in 1999 referred to in the earlier proceeding appears to support the existence of growing voter indifference. But it is an odd act of indifference for a voter to take the trouble of going to the polls only to then cast a vote without thought: this court, in the absence of clear proof, prefers to believe—perhaps naively—this would not happen. But the evidence simply does not exist. The apathetic or indifferent may, and no doubt do, stay away from the polls—lazily in despair—but nothing before the court suggests they do show up at the polls in order to vote in an ungodled fashion.

Despite such exceptions, many people in legal settings, including plaintiffs, experts, and judges, have believed that name order effects could well affect election outcomes. But are these observers correct? Why would a citizen take the trouble of going to the polls but then cast a vote without much thought?
WHY MIGHT NAME EFFECTS APPEAR?

Name order effects are in fact easy to imagine in light of a variety of findings from past psychological research. Understanding these effects must begin by acknowledging that contemporary American elections often confront voters with tremendously challenging tasks. Voters have routinely been asked to make choices in well over 150 races, ranging from highly visible contests for offices so obscure that many voters probably could not describe the job responsibilities associated with them. In 1911, for instance, Cleveland, Ohio, voters were confronted with 74 candidates for city offices; 12 candidates for Board of Education, 14 candidates for Municipal Court Judges, and 32 candidates for Constitutional Convention (Lassiter 1992). Matters were no better in 1992: Cleveland voters were asked to cast ballots in over forty county and statewide races, plus a number of districtwide races.

Because races for highly visible offices (e.g., for U.S. president and congress) receive a great deal of news media attention, often involve well-known incumbents, and usually involve explicit endorsements of candidates by political parties, voters who wish to make substantive choices can do so in principle. However, candidates in such races rarely take clear and divergent stands on specific policy issues (Berenol, Lazarfeld, and McPhie 1956; 1978). In viewing a list-of-political-candidates, voters probably search memory primarily for reasons to vote for each contender rather than reasons to vote against him or her. When working through a list, people think less and less about each subsequent alternative because they become increasingly fatigued and short-term memory becomes increasingly clogged with thoughts. Therefore, people may be more likely to generate supportive thoughts about candidates listed initially and less likely to do so for later-listed candidates, biasing them toward voting for the former.

This theory is consistent with dozens of experiments that presented objects visually and nearly always found bias toward selecting initially offered options (for a review, see Kroesnick and Fabrigar, forthcoming). For example, when students take multiple-choice knowledge tests, they are biased toward selecting answers offered early in a list, so they tend to answer items correctly more often when the correct answer is listed first than when it is listed last (e.g., Cronbach 1950; Mathews 1927). When people are told that an experimenter will imagine a series of questions and they should guess which of a set of offered response choices is the correct answer, people tend to select the first one listed (Berg and Rapaport 1954). When people are asked to taste a set of beverages or foods (e.g., four brands of beer) and select their favorite, they are biased toward choosing the first one they consider (e.g. Conoy 1977; Dean 1980). Voters may well manifest the same sort of bias in elections.

People attempting to retrieve reasons to vote for a candidate may occasionally fail completely, however, retrieving instead only reasons to vote against him or her. If this happens for all candidates in a given race, cognitive fatigue and short-term memory congestion would presumably bias a citizen toward the vote efforts may sometimes provide transportation to and press minimally informed and minimally motivated citizens into voting when they are completely uninformed about the candidates. And sometimes, more informed citizens go to the polls to vote in a few highly visible contests, yet they are asked to vote in minimally publicized races for relatively obscure offices as well. The higher "roll-off" rates (i.e., the proportion of people who went into the voting booth but failed to cast a vote in a particular race) typical of such races presumably reflect some voters' choices to abstain on the less visible races because they lack sufficient knowledge to make a choice (Burnham 1965; Robinson and Standing 1965; Vanderberg and Engstrom 1987). However, other people may feel that to be responsive democratic citizens they must not only go to the polls but must also cast votes in all listed races, even when they know only a little about the candidates and have not made a firm choice among them before entering the voting booth. New technologies—such as blinking lights on machines calling attention to races in which a person has not yet voted—may encourage people to cast votes in these cases.

How do people vote under such circumstances? One psychological theory suggests that people may be inclined to select the first name they see in a list of candidates, creating a "primacy effect" (Kroesnick 1991). People tend to evaluate objects with a confirmatory bias. Specifically, people usually begin a search of memory for information about an object by looking for reasons to select an answer, rather than reasons to not select them (Glazemann and Ha 1987; Kozier, Lightenstein, and Fischhoff 1980). In considering a list of political candidates, voters probably search memory primarily for reasons to vote for each contender rather than reasons to vote against him or her. When working through a list, people think less and less about each subsequent alternative because they become increasingly fatigued and short-term memory becomes increasingly clogged with thoughts. Therefore, people may be more likely to generate supportive thoughts about candidates listed initially and less likely to do so for later-listed candidates, biasing them toward voting for the former.

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The existence of a real problem is still a matter of controversy. The question of whether or not the voting system is fair has been debated for years. Some argue that the system is inherently flawed, while others believe that it can be improved with minor adjustments. The issue is complex and involves a variety of factors, including the mechanics of the voting process, the behavior of voters, and the history of the system itself.

Many studies have been conducted to evaluate the fairness of the voting system. Some have found that it is biased in favor of one candidate or another, while others have found that it is largely fair. However, none of these studies have been able to provide a definitive answer to the question of whether the system is fair.

One of the most common criticisms of the voting system is that it can be manipulated to favor one candidate or another. For example, some have argued that candidates can buy their way to victory by spending large amounts of money on campaign advertising. Others have claimed that voters can be coerced into voting for a particular candidate by threats or promises.

Despite these concerns, the voting system remains one of the most important institutions in our society. It is crucial that we continue to work towards improving it and ensuring that it is fair and just for all citizens.

The future of the voting system is uncertain, but one thing is clear: it is an issue that will continue to be debated for many years to come. As we move forward, it will be important to consider the perspectives of all stakeholders and to work towards creating a system that is fair and just for everyone.
precincts in Franklin County, 2,036 in Cuyahoga County, and 1,041 in Hamilton County. These constituted the units of analysis with which our tests were computed. Analyses of variance conducted on the mean vote totals received by the candidates in the precincts for 118 races in 1992 indicated that statistically significant name order effects appeared in 48% of the races, nearly always advantageing candidates listed first, by an average of 2.5 percentage points.

The tendency for primary effects to dominate was apparent even in races with nonsignificant name order effects. In races involving two candidates, 76% of the races with nonsignificant name order effects were in the direction of primary effects. Moreover, the average magnitude of the nonsignificant two-candidate primary effects (1.14%) was greater than that of the nonsignificant two-candidate recession effects (7%). Likewise, in races involving three or more candidates, 81% of the candidates who had nonsignificant name order effects manifested trends toward primary, whereas only 5% showed the preferred trends toward recession effects. If there were truly no name order effects present in these races, we would expect to see an even balance of trends toward primary and recession. The clear prevalence of primary effects suggests that when compared to the variation between precincts in election outcomes, many name order effects are sufficiently small to go undetected by significant tests, even without a fixed effect.

In the 1992 study, name order effects were most common when voters lacked substantive information with which to choose between the competitors. One substantive basis for choice is party identification: When voter knows the party affiliations of the candidates, he or she can easily vote for the member of his or her own party. When races are well publicized by the news media, voters presumably know a great deal about the candidates' personal and political histories, positions on policy issues, and more, which is why the rated the candidates. And when an incumbent is running for reelection, voters have presumably learned a great deal about their candidates while in office. Not surprisingly, name order effects were less likely to appear when candidates' party affiliations were listed on the ballot, when a race had been well publicized, and when an incumbent was running for reelection. We also found that name order effects were more likely to appear when voters were less educated, presumably because they were less attentive to political affairs and accumulated less knowledge about politics in general and candidates running for office in particular. Interestingly, controlling for other race characteristics, name order effects were more likely to appear in races listed near the top of the ballot (in which voters feel more compelled to vote) than in races lower down the ballot (where voters are more readily roll off if they lack information or feel ambivalence).

Taken together, this evidence paints a convincing portrait of name order effects as robust and startlingly common in contemporary elections. The results we reported (Miller and Kornreich 1998) may at first appear to be inconsistent with the two previous studies of this phenomenon that did not suffer from serious design flaws that found no reliable name order effects (Darrow 1964; Gold 1952). However, these studies were different from ours in ways that probably account for the differences in results.
signed to the first precinct on the list was determined by lot. Each subsequent
name order was created by moving the first-listed candidate to the end of
the list. The first name order was assigned to the first listed precinct; the second
name order was assigned to the second precinct; and this assignment pro-
cedure continued, rotating repeatedly through the name orders, until every
precinct had been assigned to a name order. This was done independently for
each race, without regard to the rotation scheme used for the other races on
the ballot.

The rotation process for statewide races in California began by first listing
all 80 assembly districts in an order beginning with the assembly district at the
northwest corner of the state and then working inland and south to end with
the assembly district in the southeast corner of the state. The name order as-
signed to the first assembly district on the list was determined randomly.
The name order assigned to the second district on the list was created by moving
the first-listed candidate to the end of the list. Additional name orders were
created by repeating this process of moving the first-listed candidate to the end.
The assignment procedure continued, rotating repeatedly through the name or-
ders, until every assembly district had been assigned to a name order. This was
done independently for each race, without regard to the rotation scheme used for
the other races on the ballot.

Analysis Strategy
The data were analyzed using the same method employed by Miller and
Krosnick (1998). We conducted analyses of variance and regressions to test the
significance of linear and nonlinear effects of name order.

RESULTS
Two-Candidate Races
Of the 170 two-candidate races run in Ohio and North Dakota, 39, or 23%, showed statistically significant or marginally significant name order effects. All but two of the statistically significant or marginally significant effects were pri-
mary effects. The percentage point difference between the votes obtained in first and last positions in the races that showed significant or marginally sig-
ificant primary effects ranged from 1.41% to 6.32% and averaged 2.86%.17

Races with More Than Two Candidates
Of the 136 candidates who ran in races with more than 2 candidates, 50, or 37%, showed statistically significant or marginally significant name order ef-
fects. Of the significant or marginally significant effects, 74% were primary ef-
fects, 27% were secondary effects, 2% were middle effects, and 6% were re-
cency effects. The average magnitude of the difference between the first and
last positions was notably greater for the significant or marginally significant
primary effects (1.36%) than for the significant or marginally significant re-
cency effects (40%), suggesting that the primary effects were more robust.17

Perhaps our most interesting finding relates to the presidential election (see Table 4.2). Being listed first on the ballot was an advantage for some candidates.

Table 4.2: Name Order Effects in Races for U.S. President and U.S. Senate

<table>
<thead>
<tr>
<th>Race</th>
<th>California</th>
<th>North Dakota</th>
<th>Ohio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name Order Effect</td>
<td>Direction Between First and Last</td>
<td>Percentage Difference</td>
<td>Direction Between First and Last</td>
</tr>
<tr>
<td>U.S. President</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown</td>
<td>Primary</td>
<td>.09</td>
<td>Primary</td>
</tr>
<tr>
<td>Buchanan</td>
<td>Primary</td>
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<td>Bush</td>
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<td>Haglin</td>
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<td>Nader</td>
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Note: For California, N = number of assembly districts; for North Dakota and Ohio, N = number of precincts.

*p < .10; **p < .05; ***p < .01.
One interesting implication of this evidence involves incumbents’ well-documented advantage in winning elections. This phenomenon has been explained by a number of factors, including the ability of incumbents to amass greater stores of campaign funds, but little attention has been paid to the fact that name order effects may be partly responsible as well. In a number of states that do not require name rotation, the ordering schemes that were used gave advantages to incumbents. For example, in Massachusetts, the incumbent running for reelection is always listed first. And in various other states, the first candidate listed in a race is specified to be from the party that most recently won that race. Such schemes not only advantage incumbent candidates and parties and enhance the likelihood of stability of governmental personnel from election to election, but they also discourage divided government by consistently according a small advantage to all members of a single party. Some courts have recognized this bias and overturned such laws (e.g., Gould v. Grube 1975; Mittman v. Paper 1970; McLennan v. Maier 1980).

Our finding: also has implications regarding the efficacy of democratic electoral systems. Name order effects are instances in which nonsubstantive factors affect election outcomes. As K. O. Key (1957, iii) put it, “A basic condition for the health of a democratic order is the existence of procedures and machinery for the conduct of elections in whose fairness and neutrality a certain confidence prevails.” Evidence of the impact of name order on election outcomes, he said, would suggest that, “In earthly practice the majority will be both influenced and distorted by the most humdrum minutiae of election procedure and administration” (ibid., iii). This sort of concern is articulated especially well by Ortiz (this volume).

Rather than viewing our evidence as bad news, as Key might have, we see it as encouraging. Although name order effects in the 1972 Ohio elections and in the 2000 election in Ohio, North Dakota, and California were prevalent, they were also quite small and concentrated among a subset of election contexts. Furthermore, bad name rotation does not always increase the majority would could have been distorted in only 3% of the races of the 1992 Ohio races we examined. Given the magnitude of the name order effects we did observe, it appears that only a very small minority of voters made what Key (1966) would presumably call “irresponsible” choices in this sense. In close elections, however, these few irresponsible voters may determine who wins and who loses.

Our evidence suggests that President George W. Bush acquired more votes when listed first than when listed last in all three states we examined. Our evidence suggests that President George W. Bush gained as a result of this law would most likely have been substantial enough to affect the outcome of the 2000 presidential election. In that light, it seems all the more important for states to reconsider name order selection to be better able to provide a fair and equal opportunity for all candidates. This may involve the use of some sort of a random assignment process that would avoid any systematic bias in name order selection.
Some readers will no doubt be surprised that George W. Bush's vote total would have been so substantially affected by name order in California because some conditions of that race generally discourage such effects. In particular, party affiliations of the candidates were listed on the ballot, and the race was tremendously publicized, through the news media generally and through the voter information booklets distributed to all Californians. On the other hand, no incumbent was running for reelection, and the race was at the top of the ballot, both factors encouraging name order effects. More importantly, the nature of the race was such that many voters may well have been very ambiva-
ient about the candidates. Indeed, seasoned scholar Kathleen Frankovic called the American public the “Ambivalence Electorate” in 2000 (Frankovic and McDermott 2001). Such ambivalence is likely to have contributed to the ap-
pearance of name order effects in that race.

It is also important to note that changing laws and rotating the ordering of candidate names is not the only way to minimize name order effects. Evide-
ence that such effects occur less often when names are well publicized, when candidates are listed with political party affiliations, and when voters are es-
pecially engaged in politics (Miller and Kreosnik 1996) points to other inter-
vention tools. Enhancing publicity to allow the public to make informed choices among candidates, enhancing public motivation to acquire and process such information, increasing the number of candidates whose names are listed with political party affiliations on ballots, and increasing the extent to which mem-
bres of the public identify with particular parties should reduce the magnitude of name order effects as well.

But the appearance of the marginally significant name order effect in votes for President Bush is an important reason to hesitate before concluding that such interventions can eliminate all name order effects. The presidential race involved candidates labeled with party affiliations and a great deal of public cam-
pany, yet a name order effect appeared nonetheless. It is therefore clear that pub-
licity, engagement, and party affiliations do not eliminate all chances of a name order effect appearing. The theory we offered here suggests that when name order effects occur under such circumstances, they are likely to be the result of voters' deep ambivalence about two equally appealing or equally unappealing candidates. Because the condition is so frequently in the future of the best technique for preventing name order effects from biased election out-
comes appears to be rotation.

Not all rotation methods are equally effective. Among the eight states that do currently rotate at least some candidate names, each one uses a different approach. The proportion of each unit used for rotation is: the fewer units the more larger units will exist in a state. And rotating across fewer units allows random chance variation in unit population size > greater opportunity to distort election out-
come. We therefore strongly recommend, as Ohio did, that way, many smaller units are used, which permit more effective rotation statewide and also permit rotation of names for races run within single coun-
ties or assembly districts. In addition, Ohio rotates candidate names across ab-
sentee ballots from ballot to ballot, a procedure we also recommend. If all this were to be done in every state across the country, the expense of conducting elections would be greater, and the potential for mistakes in implementation would rise as well, but the most important outcomes of our nation's demo-
ocratic governance process would certainly be fairest, and perceptions of the legiti-
macy of our governments would be commensurately enhanced.

NOTES
1. Our discussion from here on focuses on ballots cast on election day in general elec-
tions; laws regarding primaries are substantially more complex and are not dis-
cussed. Absentee ballots are also not discussed.
2. Our description of name ordering procedures is based upon the published name ordering statistics for the States and upon telephone conversations with elections of-
ficials in the various states. It proved to be very difficult to confirm all elections pro-
cedures with confidence by these methods, so what we offer here are our best assessments of the procedure implemented as on 2002.
3. A variety of procedures are used in California races not run in the entire state. Names of candidates competing for Congressional Representative and the State Board of Equalization are rotated by Assembly districts. State Senators and members of the State Assembly are not rotated unless the districts in which they are running en-
compass more than one county; in which case each county draws its own random order of the letters of the alphabet and orders candidate names according to that ran-
don alphabet. For offices voted on throughout a county, candidate names are ro-
tated by Assembly district if there are five or more Assembly districts within the county. If there are four or fewer Assembly districts within a county, candidate names are rotated by supervisorial districts. If a race is run in only a portion of one county, candidate names are listed according to the random alphabet drawn by the Sec-
retary of State. Candidates for Justice of the Supreme Court and Court of Appeals of California are arranged according to the random alphabet and are not rotated at all.
4. States may also vary in the credibility they attribute to the argument that name or-
der rotation limits the value of sample ballots distributed to voters during a cam-
paign. If citizens mark a desired candidate on the sample ballot while at home and then vote for the candidate listed in that position on the ballot (not checking to see whether the names match), differences between candidate name orders on sample ballots and actual ballots on election day may cause voting errors.
5. See, for example, Brooks v. Board of Education Commissioners, (OFT) where the ad-
advantage was estimated to be from 2.5 to 25% of the vote and Sengwerter v. Woodard 1977, where being listed first was reported to garner “13.3% more votes than second place” (403). In McCarthy v. Meir (1981), the advantage was “at least 5 percent” (1166). In Kerr et al. v. New York State Board of Elections et al. 2000, a name order effect of 7.7% was found in a particular election. Testimony in Clough v. Gezi 1976 reported a 5% to 15% increase in the first candidates’ total vote.
6. Professor Robert Darcy has testified a number of times (e.g., Greenville et al. v. McElroy et al. 1996, Kerr et al. v. New York State Board of Elections et al. 2000), asserting, for example, that, “Position bias is certainly not a factor which affects the outcome of any political races for public office in those partisan elections that receive a large amount of public attention” (Greenville et al. v. McElroy et al. 1996). Darcy’s testimony was based primarily on his own studies of name order effects and his critiques of the methods used in other previous studies.
7. Professor Richard Simkova said, "There has virtually nothing at all been done on the subject and much less anything been shown. There is no evidence upon which to base an opinion" (Sengwerter v. Woodard 1977, 463).
8. For example, in a 1972 Ohio State Senate race between Robin Turner and Gene Sarge, Turner lost by 155 votes. Due to improper implementation of the name rotation required by Ohio law, Sarge's name appeared first on 15,289 ballots in Marion County, compared to 17,629 ballots in that county in which Turner's name appeared first. When Sarge's name was listed first, Sarge got 44.2% of the votes, whereas when Turner's name was listed first, Sarge got 42.0% of the vote. This was consistent with a name effect. Adjusting the vote totals to simulate the number of votes that would have been cast for the candidates had name rotation been properly implemented, it could be calculated that Sarge would have received 76 fewer votes and Turner would have received 76 more votes, yielding totals of 57,472 for Sarge and 57,469 for Turner. There is no basis in these numbers to overturn the election outcome. Simply being repeatedly exposed to an object typically increases one's liking of that object (Zajonc 1968). Therefore, because many more people in the general population have last initials early in the alphabet, the last initials of the names of the candidates are likely to be exposed to more names more often than they are seen with, last initials late in the alphabet. As a result, the general population should have a slight tendency to like last names early in the alphabet more than last names late in the alphabet. This slight preference might then lead some voters to prefer candidates whose last initials are early in the alphabet. Clearly, then, studies involving only alphabetical listings of candidates on ballots cannot be used to make inferences about candidate name order effects.

10. We tested the impact of circumstantial factors in regressions predicting the magnitude of the name order effect in the races using an array of variables describing the races' characteristics. We explored the impact of voter education by computing name order effects in different regions of the state that differed in the average education level of voters.

11. Confidence in these findings is bolstered by their consistency with three previous studies of name order effects in experimental simulations of elections (Coombs, Polls, and Strum 1974; Kanin 1958; Taibel 1975). In two of these studies, respondents who were asked to vote in hypothetical elections were assigned to receive candidates' names in different orders, and were given little or no information about the candidates (Kanin 1958; Taibel 1975). Both studies found observed significant primary effects, in line with our results. In a third study, respondents were asked to vote for one of two candidates about whom they had no information; a strong bias toward voting for the first candidate listed was apparent (Coombs et al. 1974). This primary effect weakened considerably when respondents were told about the party affiliations of the candidates and were told about their standings in public opinion polls (Coombs et al. 1974), reinforcing our evidence regarding partisanship and voter knowledge. Thus, our evidence about the 1992 Ohio elections dovetails with evidence from the experimental studies of hypothetical elections.

12. Dreyer (1986) examined only partisan races held in Colorado, and we found that name order effects are much less likely to occur in partisan than nonpartisan races. In addition, the Colorado counties Dreyer (1986) examined used party-block ballots, in which all the Democratic Party candidates for all offices were listed in one column (labeled "Democratic"), and all the Republican Party candidates were listed in another column (labeled "Republican"). In half of the precincts, the Democratic column preceded the Republican column, and in the other half, the Republican column preceded the Democratic column. This type of ballot layout presumably encouraged voters to cast ballots based upon candidates' party affiliations, because this information was very salient. Our results suggest that this minimized or eliminated name order effects.
Gould (1952) examined the effect of name order in the 1951 American Anthropological Association elections, conducted by mail and giving voters all the time they needed to gather information about the candidates before making choices. This presumably decreased the likelihood of order-based voting.

14. Given that many counties in North Dakota contained fewer than fifteen precincts, that we had to obtain vote returns separately from the counties' Boards of Elections, and that many counties failed to cooperate with our requests for vote returns, we worked to obtain data from enough counties to yield at least fifty precincts for each of the seven rotation orders for the race for U.S. president. Of the fifty-three counties in the state, we ended up with data from fourteen of the sixteen largest (excluding one county that did not rotate name order and one county that was unresponsive to repeated requests for vote returns).

15. The prevalence of primary effects also appears if we examine the direction of the nonsignificant effects. Of the 131 nonsignificant order effects, 90, or 68%, of them were in the direction of primary effects, and 31% were in the direction of recency effects. A sign test indicates that this is highly unlikely ($p < .001$) to have occurred by chance alone. Moreover, the average magnitude of the nonsignificant two-candidate primary effects (50%) was 24% greater than that of the nonsignificant two-candidate recency effects (7%). This leaning toward primary effects among the nonsignificant differences is unlikely to have occurred by chance alone and therefore suggests that there were more real primary effects in those races than we had statistical power to detect.

16. Characterizing the direction of name order effects in these races is a bit complex because the effect may not be monotonic. Although simple primary or recency effects could certainly occur, a candidate could get more votes when listed either first or last than when listed in the middle of an array. This would be what we will refer to as a "primary and recency" effect. It is also conceivable that a candidate might get more votes when listed in the middle of an array than when listed either first or last. This is what we will refer to as a "middle" effect.

17. This trend toward primary effects was apparent even in the instances in which differences between name orders were not statistically significant or marginally so. Of the 56 nonsignificant order effects in races involving more than two candidates, 63 (or 72%) were in the direction of primary effects, and only 23 (or 27%) were in the direction of recency effects. A sign test again indicates that this is extremely unlikely ($p < .001$) to have occurred by chance alone. The average magnitude of the difference between the first and last positions was larger for the nonsignificant primary effects (16%) than the nonsignificant recency effects (14%).

18. Significant name order effects appeared in these analyses less often than in those reported by Miller and Kroessick (1988). This is most likely attributable importantly to the greater prevalence of partisan races among the set examined here (listing party affiliations of candidates on ballots reduces the likelihood of primary effects; see Miller and Kroessick 1988) and to the smaller sample sizes examined here for most races. For example, whereas 79% of the two-candidate races in Ohio analyzed here were partisan, only 57% of the two-candidate races analyzed by Miller and Kroessick (1988) were partisan. And whereas the average sample size for the two-candidate races analyzed here (excluding the two statewide races) was 443, the average sample size was 1,132 for the two-candidate races analyzed by Miller and Kroessick (1988).
Bibliography

[References to various works on philosophy, history, and political science, including authors like John Locke, Thomas Jefferson, and Karl Marx.]

For example:

- [John Locke, Two Treatises of Government, 1690.]
- [Thomas Jefferson, Declaration of Independence, 1776.]
- [Karl Marx, The Communist Manifesto, 1848.]
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