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Ballot Design as Fail-Safe: An Ounce of Rotation Is Worth a Pound of Litigation

Mary Beth Beazley

ABSTRACT

For generations, some candidates have argued that first-listed candidates gain "extra" votes due to primacy effect, recommending ballot rotation to solve the problem. These votes, however, are generally intentional votes, accurately cast, and rotation is controversial. This article argues that rotation is appropriate because it mitigates the electoral impact of not only primacy effect, but also of two categories of miscast votes. First, rotation mitigates the impact of proximity-mistake votes, which can occur even on well-designed ballots when voters mis-vote for a candidate in proximity to their chosen candidate. Second, rotation mitigates the impact of mis-votes caused by flawed ballot designs, providing a fail-safe that can prevent some electoral meltdowns. Ballot rotation represents a last-best-chance to avoid the electoral impact of foreseeable and unforeseeable voter error and ballot design issues. Although the impact is small for each of these kinds of voter behavior, some elections are won in the margins. Further, because post-election fixes are both costly and ineffective, states should use election procedures that minimize the need for post-election litigation. Legislators should enact precinct-level rotation to evenly distribute the benefits and burdens of various ballot positions and to promote election results that more accurately reflect the choice of the electorate.

I. INTRODUCTION

HUMAN BEINGS—even smart human beings—make certain predictable mistakes when they interact with visual information. As an example, count the number of times that the letter "F" appears in the following sentence:

> FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF YEARS.[1]

Most people who take this test come up with the wrong answer. In fact, the vast majority come up

[1] My niece Lisa Beazley Kling sent me this little parlor trick while she worked as an editor at a publishing house. I don't know its origin, but this example of cognitive befuddlement is widely available on the Internet. *E.g.,* < http://www.uscg .mil/safety/docs/TCT/tctigcases.pdf > at I-31.

with the *same* wrong answer.[2] Failing the test helps people to realize that their eyes (and brains) will sometimes play tricks on them when they interact with visual information.

So why does that matter? It matters because in the United States, we interact with visual information to exercise one of our most precious rights. As the United States Supreme Court has often observed, it is a "'fundamental principle of our representative democracy,' embodied in the Constitution, that 'the people should choose whom they please to govern them.'"[3] The people make that choice by interacting with visual information in a particular way: by using a ballot to vote.[4]

In the eighteenth century, United States voters were often allowed to fashion their own ballots to bring to the polls, or to bring ballots produced by political parties.[5] Now, however, the government controls the voting process more directly, and it mandates the configuration of the ballot that absentee voters, early voters, and Election Day voters must complete, requiring that voters may use only a specific, government-issued ballot.[6] When governments take on the responsibility of mandating a particular ballot and then designing that ballot, they become "choice architects,"[7] that is, they design the structures that people use to exercise a choice. In the case of elections, election administrators design—or choose the design of—the ballots that voters use to select the holders of dozens of national, state, county, and local offices.[8] Because governments require voters to use a specific ballot to exercise their most fundamental right of citizenship, they have an obligation to ensure that the ballot does not needlessly interfere with the exercise of that right.

As Sunstein and Thaler wrote in *Nudge*, their landmark work on behavioral economics, choice architects are controlling "the context in which people make decisions," and they must be aware that "small and apparently insignificant details can have major impacts on people's behavior."[9] In a cafeteria, for example, you're more likely to get dessert if it's at eye level.[10] In the retirement context, the seemingly insignificant detail of whether a retirement savings program is designed with an opt-in feature as opposed to an opt-out feature can have a huge impact on the amount of money that people save for retirement, and thus, on their health and well-being during retirement.[11] And in the electoral context, seemingly insignificant details about ballot technology—i.e., the

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[2]I have given this test to over 2,000 people. My method is certainly not scientific; participants raise their hands to respond. A few people see two F's, while almost all see three F's, which is half as many F's as there really are. If you got it right, congratulations (particularly if you have never taken this test or a similar one). I hypothesize that the reason most of us don't see the correct number of F's is that our subconscious translates the F's in the word *of* to V's. The lesson to learn is that our subconscious is sometimes busier than we imagine, and it sometimes gives us wrong information (the number of F's) that we then act on (by delivering a wrong answer).

[3]*U.S. Term Limits v. Thornton*, 514 U.S. 779, 783 (1995) (citing *Powell v. McCormack*, 395 U.S. 486, 547 (1969) (internal quotation marks omitted)) (holding that states could not ban members of Congress from appearing on the ballot after certain number of terms, even if it allowed them to be elected via write-in votes).

[4]This article will not address the important issues concerning the voting rights of people with visual disabilities. *See e.g.*, Daniel P. Tokaji and Ruth Colker, *Absentee Voting by People with Disabilities*, 38 McGeorge L. Rev. 1015, 1016 (2007) (noting that certain federal statutes often "helped improve the accessibility of polling places [but that] they have not fulfilled their promise of ensuring accessible voting for all persons with disabilities" (citation omitted)).

[5]*Burson v. Freeman*, 504 U.S. 191, 200-01 (1992) (noting that "[i]ndividual voters made their own handwritten ballots, marked them in the privacy of their homes, and then brought them to the polls for counting," and that political parties later produced ballots in bright colors that could be recognized from a distance so that party officials could be sure for whom voters were casting their ballots) (citing S. Albright, The American Ballot 14–20 (1942); E. Evans, A History of the Australian Ballot System in the United States 5, 7, 11 (1917); J. Harris, Election Administration in the United States 9–14, 17, 151–52 (1934); V. Key, Politics, Parties, and Pressure Groups 649 (1952); J. Reynolds, Testing Democracy: Electoral Behavior and Progressive Reform in New Jersey, 1880–1920, p. 36 (1988); J. Rusk, The Effect of the Australian Ballot Reform on Split Ticket Voting: 1876–1908, pp. 8–23 (1968)).

[6]*E.g.,* N.D. Cent. Code § 16.1-06-03 ("Ballots other than official ballots prepared by the county auditor or local auditor or clerk may not be cast or counted in any election governed by this title.").

[7]Richard H. Thaler and Cass R. Sunstein, Nudge: Improving Decisions about Health, Wealth, and Happiness 3 (2008 Yale University Press).

[8]*E.g.*, Joanne M. Miller and Jon A. Krosnick, *The Impact of Candidate Name Order on Election Outcomes*, 62 Pub. Opinion Q. 291, 292 (Issue 3, 1998) (noting that "[c]ontemporary American elections often confront voters with tremendously challenging tasks," and that "in all states, voters have sometimes been asked to make choices in well over two dozen contests, ranging from high visibility contests to contests for offices so obscure that many voters probably could not describe the job responsibilities associated with them").

[9]Thaler and Sunstein, *supra* note 7, at 3.

[10]*See id.* at 1.

[11]*Id.* at 248–49.

papers, machines, and other devices that we use to vote—can affect who people decide to vote for, whether they cast a vote at all, and, most significantly, whether they are able to vote accurately or validly.[12]

Ballot technology and design received a great deal of attention after the troubles of the 2000 presidential election, when much of the public became aware that certain ballot designs predictably caused voters to cast invalid votes or wrong votes.[13] Appropriately, reformers have focused on reducing the number of so-called "residual votes."[14] "Residual vote" is the term used to describe contests in which a voter does not cast a valid vote. A residual vote can be an "undervote" (i.e., a contest with a non-registered vote) or an "overvote" (i.e., a contest with more votes registered than is allowed, resulting in no vote being counted for that contest). This article suggests that too little attention has been paid to a different design-related problem: votes that are valid, but that were influenced in some way by the position of particular candidates[15] within each contest. I call these votes *position-influenced votes*.

While there may be many different ways in which position on the ballot influences voters, this article will concentrate on three categories of posi-

tion-influenced votes. These are primacy-effect votes, proximity-mistake votes, and ballot-flaw-induced votes:

(1) *Primacy-effect votes* are accurately cast votes cast by a small percentage of voters who were influenced in a predictable way[16] to vote for or against a particular candidate. Typically, voters are influenced to vote *for* the candidate listed first on the ballot for a particular contest.[17] A primacy-effect vote is a position-influenced vote because the position of the candidate's name influenced the voter's *decision* as to who to vote for.

(2) *Proximity-mistake votes* are miscast votes that occur when the voter mistakenly votes for a candidate whose name is adjacent to the name of the voter's chosen candidate; these mistaken votes can occur even on well-designed ballots. Proximity mistake votes are more likely when the name of a voter's candidate is located in a disfavored position on the ballot, one that is more difficult to find or more difficult to vote for accurately. For example, a candidate whose name is at the beginning

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[12]*E.g.*, Miller and Krosnick, *supra* note 8, at 293–94 ("One psychological theory of order effects predicts 'primacy effects,' which are biases toward selecting the first object considered in a set. … This theory is consistent with dozens of experiments that presented objects visually and nearly always found bias toward selecting initially offered options.") (citations omitted); Ned Augenblick and Scott Nicholson, *Choice Fatigue: the Effect of Making Previous Choices on Decision Making*, at 23 (Apr. 2009), *available at* < http://www.stanford.edu/~ned789/Choice_Fatigue.pdf > ("We find that voters are more likely to abstain and more likely to rely on decision shortcuts, such as voting for the status quo or the first candidate listed in a contest, as the ballot position of a contest falls."); LAWRENCE NORDEN, DAVID KIMBALL, WHITNEY QUESENBERY, AND MARGARET CHEN, BETTER BALLOTS 24–27 (Brennan Ctr. for Justice at NYU 2008), *available at* < http://brennan.3cdn.net/d6bd3c56be0d0cc861_hlm6i92vl.pdf > (noting that a Sarasota County ballot violated good design principles by putting two contests on the same computer screen, probably leading more than 13% of voters to skip a two-candidate congressional contest, which was located at the top of the same screen as a gubernatorial contest that listed 12 candidates for governor and lieutenant-governor and took up the vast majority of the screen); *Southwest Voter Registration Educ. Project v. Shelley*, 344 F.3d 882, 898 (9th Cir. 2003) (enjoining California Secretary of State from conducting an election in which some counties would use error-prone punchcard ballots while others used more modern voting technologies), *rev'd en banc*, 344 F.3d 914, 919–20 (9th Cir. 2003) (finding that electoral impact of potential errors was "merely a speculative possibility").
[13]Jonathan N. Wand, Kenneth W. Shotts, Jasjeet S. Sekhon, Walter R. Mebane, Jr., Michael C. Herron, and Henry E.

Brady, *The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, Florida*, 95 AM. POL. SCI. REV. 793, 803 (2001) (conducting intensive study of ballots in Palm Beach County and concluding that "the butterfly ballot caused systematic voting errors in [Palm Beach County]"); *see also* Richard G. Niemi and Paul S. Herrnson, *Beyond the Butterfly: The Complexity of U.S. Ballots*, 1 PERSPECTIVES ON POLITICS 317, 324 (2003) (observing that structural problems are not alone and concluding that badly written instructions and other problems lead voters "to mismark, fail to mark, or spoil their ballots").
[14]*E.g.*, NORDEN ET AL., *supra* note 12, at 19 ("Residual" or "lost" votes "are typically calculated as the difference between the number of people voting and the number of valid votes cast for a particular office. Residual votes can be undervotes (not selecting any choice on the ballot, either accidentally or intentionally) or overvotes (selecting too many choices, usually accidentally)." (citation omitted)).
[15]This article will use the term "candidates," but the conclusions of this article may also apply to other voting options, e.g., contests in which voters are deciding whether to vote "yes" or "no" on a ballot issue.
[16]*E.g.*, Augenblick and Nicholson, *supra* note 12, at 23 (noting that voters who have many voting decisions to make will likely rely on "decision shortcuts" such as voting for the first candidate in a contest).
[17]This type of vote is based on a type of position impact often referred to as *position bias* or *primacy effect. E.g.,* Jonathan G. S. Koppell and Jennifer A. Steen, *The Effects of Ballot Position on Election Outcomes*, 66 J. POL. 267, 269 (2004).

or end of a list of three or more names is easier to find, and to vote for accurately, than a candidate whose name appears in the middle of the list.[18] Voters may be unwilling or unable to spend the time or cognitive costs needed to vote accurately for a candidate whose name is located in that disfavored position on the ballot, so the vote is a position-influenced vote because the disfavored position influenced the voter's *ability* to cast the vote correctly.

(3) *Ballot-flaw-induced votes* are miscast votes caused by ballots with design flaws that predictably lead a percentage of voters to make certain categories of mistakes when voting.[19] The "butterfly ballot" used in Palm Beach County, Florida in the 2000 presidential election is the most famous example of a ballot that caused voters to cast this kind of mistaken position-influenced vote.[20] Like a proximity-

mistake vote, a ballot-flaw-induced vote is a position-influenced vote because the position of the candidate's name on the ballot influenced the voter's *ability* to cast the vote correctly.

Position-influenced votes are more harmful to the franchise than residual votes. While residual votes may reflect a vote not counted in a particular contest, position-influenced votes may do more than take away a vote from a voter's preferred candidate: they may award a vote to the opponent of a voter's preferred candidate.

Any measurable changes in vote totals are important because close elections are not unusual.[21] Position-influenced votes may account for a change of vote totals from 1–5% (from primacy-effect votes),[22] .25% to 2–3% or more (proximity-mistake votes),[23] or .5% to more than 1% (ballot-flaw-induced votes).[24] Accordingly, any of these kinds

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[18]PAUL S. HERRNSON, RICHARD G. NIEMI, MICHAEL J. HANMER, BENJAMIN B. BEDERSON, FREDERICK C. CONRAD, AND MICHAEL W. TRAUGOTT, VOTING TECHNOLOGY: THE NOT-SO-SIMPLE ACT OF CASTING A BALLOT 195, n. 16 (Brookings Institute Press 2008) (noting that voters who planned to vote for either the first or last candidate on a list committed fewer proximity errors than those who intended to vote for candidates other than the first or last candidate—i.e., those in the middle of the list).

[19]*E.g.*, NORDEN ET AL., *supra* note 12, at 9 ("[T]here is a respectable argument that poor ballot design and confusing instructions have resulted in far more lost votes than software glitches, programming errors, or machine breakdowns. As this report demonstrates, poor ballot design and instruction have caused the *loss of tens and sometimes hundreds of thousands of votes in nearly every election year*") (emphasis in original).

[20]*E.g.*, Wand et al., *supra* note 13, at 803.

[21]Many contests are decided by close margins. NORDEN ET AL., *supra* note 12, at 9 ("All too often, the loss of votes and rate of errors resulting from these mistakes are greater than the margin of victory between the two leading candidates. As the examples in this report show, problems caused by poor ballot design and instructions recur in American elections, regardless of the type of voting technology a jurisdiction has used."). Victory margins of less than 1% are not unusual even in significant contests (e.g., the 2000 presidential, 2004 Washington gubernatorial, and 2008 Minnesota U.S. Senate contests were all decided by margins of less than 1%). *See also Sonneman v. State*, 969 P.2d 632, 639 n. 7 (Alaska 1998) (accepting as true allegation that primacy effect affects 5–7% of votes cast, and that elections in Alaska are "often decided by margins less than 5%").

[22]*E.g.*, Jon A. Krosnick, Joanne M. Miller, and Michael P. Tichy, *An Unrecognized Need for Ballot Reform: The Effects of Candidate Name Order on Election Outcomes*, *in* RETHINK-

ING THE VOTE: THE POLITICS AND PROSPECTS OF AMERICAN ELECTION REFORM 51, 66 (A.N. Crigler, M.R. Just, and E.J. McCaffery eds., Oxford University Press, 2004) (giving results of a study of the 2000 elections in Ohio and North Dakota and reporting primacy effects in two-candidate contests that ranged from 1.41% to 6.32%, with an average of 2.88%); Daniel E. Ho and Kosuke Imai, *Estimating Causal Effects of Ballot Order from a Randomized Natural Experiment: The California Alphabet Lottery, 1978–2002*, 72 PUB. OPINION Q. 216, 230, 236 (2008) (finding a primacy effect between 1% and 2% in primary contests, but no primacy effect for major candidates in general elections).

[23]Erzo F.P. Luttmer and Kelly Shue, *Who Misvotes? The Effect of Differential Cognition Costs on Electoral Outcomes*, at 32 (November 2006), *available at* <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=902394> (analyzing California gubernatorial recall election and concluding that misvotes due to proximity mistakes "accounted for at least .25% of all votes cast"); HERRNSON ET AL., *supra* note 18, at 73 (in study of more than 1,500 subjects, finding 2–3% error rate in simplest voting tasks, and a higher error rate in more complex voting tasks).

[24]*See* NORDEN ET AL., *supra* note 12, at 33 (citing Ellis Jacobs, *Spoiled Ballots: Under and Overvotes in the 2004 General Election in Montgomery County, Ohio* 4 (Feb. 15, 2005) (article on file with the author); (noting average 2.6% error rate in precincts with confusing ballot design, as compared to average 1.1% error rates in precincts in which ballot design was less confusing). *See also* Wand et al., *supra* note 13, at 803 (conducting intensive study of ballots in Palm Beach County and identifying an error rate that computes to at least .74% and concluding that "[h]ad [Palm Beach County] used a ballot format in the presidential contest that did not lead to systematic biased voting errors, our findings suggest that, other things equal, Al Gore would have won a majority of the officially certified votes in Florida.").

of position-influenced votes, alone or in concert with another, could change the outcome of a sufficiently close election.[25]

It is probably impossible to eliminate position-influenced votes completely. No matter how much time and money candidates and election officials spend on educating voters, there will remain a small—and potentially electorally significant—percentage of voters whose voting decisions are affected by primacy effect.[26] Likewise, it is axiomatic that human beings make mistakes in all contexts, and that they will continue to make mistakes when casting votes, particularly when their preferred candidate is in a disfavored location such as the middle of a list.[27] Finally, while improvements in ballot design may reduce the chances of ballot-flaw-induced votes, new designs can lead to new mistakes.[28]

Although election administrators cannot completely eliminate position-influenced votes, they can almost always eliminate electoral impact resulting from all three of these categories of position-influenced votes with a simple design change that is already in use in several states. States can stop using *fixed-position ballots*—that is, ballots on which the candidate names in each contest appear in the same position and the same order on all ballots in the relevant jurisdiction. Instead, they can use rotated ballots—that is, they can implement an effective system of *ballot rotation.* On rotated ballots, candidate names take turns in the various positions in the contest, in the same way that children take turns riding in the good and bad seats in a car on a long trip.

The best system of ballot rotation would rotate names by ballot, ensuring that each candidate's name would appear in each position on the contest list on an approximately equal number of ballots.[29] States should at least, however, rotate names by precinct: thus, each candidate's name should appear in each position on the contest list in an approximately equal number of precincts. Precinct-level ballot rotation can mitigate the electoral impact of all three kinds of position-influenced votes. Any primacy-effect votes would be spread among all candidates in a contest. More importantly, rotation would spread the burden of disfavored locations in the contest list—and the proximity-mistake votes that result—by allowing all candidates equal or nearly equal time in the favored and disfavored positions. Finally, ballot rotation could provide a fail-safe to prevent the

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[25]Twenty states and the District of Columbia have laws that trigger automatic recounts for some or all contests when elections are particularly close. Four of these 20 states (and the District) require a recount when the margin of victory is 1% or less. The rest of the 20 states have automatic recount laws that are triggered only when the margin is .5% or smaller. These laws indicate both that margins larger than .5% -1% (and thus within 5%) are more common and that states are less likely to closely examine voting processes when the margin is bigger than 1%. *See generally* the *State Recount Laws Searchable Database* created by the Minnesota Center for Electoral Integrity, *available at* <http://ceimn.org/ceimn-state-recount-laws-searchable-database>.

[26]*E.g.*, Marc Meredith and Yuval Salant, *Causes and Consequences of Ballot Order-Effects*, STANFORD INSTITUTE FOR ECONOMIC POLICY RESEARCH DISCUSSION PAPER NO. 06-29 at 3 (Feb. 2007) (concluding that voters who must select more than one candidate in a contest (e.g., in a city council contest) may be less likely to vote for a candidate whose name is positioned immediately after the name of a very popular candidate).

[27]HERRNSON ET AL., *supra* note 18, at 195, n. 16 (noting that voters who planned to vote for either the first or last candidate on a list committed fewer proximity errors than those who intended to vote for candidates other than the first or last candidate—i.e., those in the middle of the list).

[28]As one author noted, after the butterfly ballot debacle, "[s]tates…invested millions of dollars to update voting systems, but the design of touch-screen and paper-based optical scan ballots is often as confusing and thoughtless as that of the punchcard ballots they replaced." MARCIA LAUSEN, DESIGN FOR DEMOCRACY: BALLOT+ELECTION DESIGN 8 (University of Chicago Press 2007).

[29]The focus of this article is a rotation system that rotates the order of names within a given contest. Some scholars advocate rotating contests, because ballot fatigue has more of an impact later in the ballot, thus increasing chances of primacy effect and abstention. *See* Augenblick and Nicholson, *supra* note 12, at 23 ("We find that voters are more likely to abstain and more likely to rely on decision shortcuts, such as voting for the status quo or the first candidate listed in a contest, as the ballot position of a contest falls."). Other scholars recommend re-ordering names in each contest as well as rotating them, observing that candidates in multi-vote-contests (e.g., city council), lose voteshare if their names are listed immediately after (or occasionally immediately before) those of high-popularity candidates. *See* Meredith and Salant, *supra* note 26, at 24 ("Finally, our results have implications for the study of choice and decision making in other real world settings. They suggest that a decision maker evaluating an alternative is affected not only by its position but also by the alternative listed immediately before.").

impact of systemic harms caused by flawed ballot designs that lead to ballot-flaw-induced votes, votes whose mistakes all go one way on fixed-position ballots.[30]

This article argues that ballot design should take into account the way that human beings actually vote in order to fairly distribute the predictable benefits and burdens of ballot position. Specifically, it recommends that states implement precinct-level ballot rotation systems[31] to mitigate the electoral impact of all three categories of position-influenced votes. Part II of this article briefly examines the ways in which United States ballots are designed and explains some of the ways in which states organize their fixed-position or rotated ballots. Part III explains how election results can be affected by unavoidable ballot realities that can influence voters' decision-making processes or lead them to miscast their votes. Finally, Part IV discusses justifications for ballot rotation, examines why litigation may not be the best way to reach this goal, and explains why legislators might have good reasons to implement precinct-level rotation systems.

II. TYPICAL BALLOT DESIGNS

In the United States, ballot design is a highly decentralized activity.[32] Article I, Section 4 of the United States Constitution provides that "The Times, Places and Manner of holding Elections for Senators and Representatives, shall be prescribed in each State by the Legislature thereof; but the Congress may at any time by Law make or alter such Regulations."[33] Historically, the federal government has left ballot design to the states. For example, all states now use an official ballot that voters mark in relative privacy (also known as the "Australian ballot").[34] This method was not, however, mandated by the federal government. As evidence of the strong decentralization of ballot design, one of the first jurisdictions to adopt the secret ballot was a city (Louisville, Kentucky, in 1888), although the practice soon spread nationwide.[35]

Since the 2000 election, most states have moved away from punch card and lever machine voting systems, thanks mainly to funding made available by the Help America Vote Act (HAVA).[36] However, while state decisions to

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[30]It is estimated that the butterfly ballot cost Al Gore at least 2,000 votes in the 2000 presidential election. Wand et al., *supra* note 13, at 795. George W. Bush, who was listed first on the ballot, won the State of Florida by 537 votes, according to the Election Results compiled by the Federal Elections Commission, *available at* < http://www.fec.gov/pubrec/fe2000/2000presge.htm#FL > . If names on the butterfly ballot had been rotated, it is possible that Gore would have gained enough votes (when Gore was in favored locations on the ballot), and Bush would have lost enough votes (when Bush was in disfavored locations on the ballot) to neutralize the impact of the poor design problem, thus changing the result of that election.
[31]The most effective ballot rotation system would probably rotate names from ballot to ballot; at the very least, an effective rotation system would rotate names by precinct rather than by larger electoral units. *See infra* note 53 (contrasting Ohio's rotation-by-precinct statute with California's rotation-by-assembly-district statute).
[32]*E.g.*, Daniel P. Tokaji, *The Birth and Rebirth of Election Administration*, 6 ELECTION L. J. 118, 121 (2007), reviewing ROY G. SALTMAN, THE HISTORY AND POLITICS OF VOTING TECHNOLOGY: IN QUEST OF INTEGRITY AND PUBLIC CONFIDENCE (cited in HEATHER K. GERKEN, THE DEMOCRACY INDEX 4 (Princeton University Press 2009)).
[33]The Help America Vote Act (HAVA) did not mandate changes in voting technology; instead, it made funds available to states to improve voting technology and help states replace punchcard and lever machines. *See* 42 U.S.C. § 15302.
[34]Burt Neuborne, Buckley's *Analytical Flaws*, 6 J.L. & POL'Y 111, 118 (1997). The right to a secret ballot has generally been granted not by the federal government, but by the states.

See, e.g., John Doe No. 1 v. Reed, 130 S. Ct. 2811, 2834 (2010) (Scalia, J., concurring) (discussing history of public voting in the United States after observing that "[w]e have acknowledged the existence of a First Amendment interest in voting…but we have never said that it includes the right to vote anonymously"). In 1981, the Sixth Circuit observed that "the [U.S.] Constitution does not specifically guarantee that a person has a right to a secret ballot, [but] such a right has been recognized as one of the fundamental civil liberties of our democracy.…In order to protect the secrecy of the ballot, many states have enacted constitutional provisions dictating that all ballots must be cast under the cloak of complete privacy." *Anderson v. Mills*, 664 F.2d 600, 608 (6th Cir. 1981). HAVA does not mandate a secret ballot, but does mandate that voters have a "private" opportunity to correct voting errors. 42 U.S.C. § 15481 requires that certain voting systems must "provide the voter with the opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted."
[35]*E.g.*, *Burson v. Freeman*, 504 U.S. at 204. The Commonwealth of Massachusetts and the State of New York also adopted the Australian Ballot that year. Further, "[t]he triumphs of 1888 set off a rapid and widespread adoption of the Australian system in the United States. By 1896, almost 90 percent of the States had adopted the Australian system. This accounted for 92 percent of the national electorate." *Id.* at 204-05 (citations omitted).
[36]*E.g.*, BUILDING CONFIDENCE IN U.S. ELECTIONS: REPORT OF THE COMMISSION ON FEDERAL ELECTION REFORM 25 (Sept. 2005), *available at* < http://www1.american.edu/ia/cfer/report/full_report.pdf > (hereinafter CARTER-BAKER REPORT); *see also* 42 U.S.C. § 15302.

reject old election technology were perhaps motivated by the federal government, each state retained the authority to decide what system it would move *to*.[37]

Although HAVA has resulted in multiple new rules and guidelines, many crucial ballot design decisions are still in the hands of state legislatures,[38] with some decisions delegated to the local level. Legislators or election officials decide what kind of voting technology to use and how to arrange the contests on the ballot, including whether to put issues contests before candidate contests, the order in which to arrange candidate contests, how many contests to put on a page or screen, how to arrange contests in columns, whether to use the slate or office block method for candidate contests, and, finally, the order in which to list candidate names or issue choices within each contest.[39] Each one of these decisions can have an impact on how quickly and accurately voters cast their ballots, and even on whether they will notice certain contests in order to cast votes in them.[40] In many states, election officials do not focus on good design, leaving these decisions in the hands not of design experts, but of partisans.[41]

States generally order contests in a similar way, moving from national elections to statewide elections to local elections. There is little uniformity, however, in how states use—or don't use—rotation.

A. *Slate v. office block ballots*

As recently as the 1960s, most states used a style of ballot organized around political parties.[42] These ballots, known as "slate ballots" or "party column ballots," list each party's entire slate of candidates, in order of contest. Many of these ballots are set up like a table, with parties on the vertical axis and offices on the horizontal axis (or vice versa). Because minor parties may field candidates for only one or two contests, slate ballots are almost always organized with the slates of the two major parties listed first and second.[43] Slate ballots make it easy for voters to vote a "straight ticket" ballot, because they need only to move down or across the ballot, voting

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[37]*See* 42 U.S.C.A. § 15485 ("The specific choices on the methods of complying with the requirements of this subchapter shall be left to the discretion of the State.") (referring to Subchapter III: "UNIFORM AND NONDISCRIMINATORY ELECTION TECHNOLOGY AND ADMINISTRATION REQUIREMENTS").

[38]Further, even though the Constitution grants authority to the states, legislatures delegate many of these decisions to the county level. In some states, ballot design may vary significantly from county to county. *E.g.,* Barney Warf, *Voting Technologies and Residual Ballots in the 2000 and 2004 Presidential Elections*, 25 POLITICAL GEOGRAPHY 530, 531 (Issue 5, June 2006) ("Because the decision to adopt various types of voting technologies is typically (but not always) made at the county level, generally by county elections supervisors, there are wide geographic variations among counties in the types of technologies deployed and their effectiveness.").

[39]*See, e.g.*, Laura Miller, *Election by Lottery: Ballot Order, Equal Protection, and the Irrational Voter*, 13 N.Y.U. J. LEGIS. & PUB. POL'Y 373, 380–81 (2010).

[40]*E.g.*, NORDEN ET AL., *supra* note 12, at 24–27 (noting that a Sarasota County ballot violated good design principles by putting two contests on the same computer screen, probably leading more than 13% of voters to skip a two-candidate congressional contest, which was located at the top of the same screen as a gubernatorial contest that listed 12 candidates for governor and lieutenant-governor and took up the vast majority of the screen).

[41]*E.g.*, Heather K. Gerken, *Shortcuts to Reform*, 93 MINN. L. REV. 1582, 1585 (2009) ("Many of the local officials who run our elections have strong partisan ties. While bias is the most disturbing consequence of partisanship, it's not the most common. Perhaps the most unfortunate byproduct of partisanship is a lack of professionalism. A system that depends on the political parties to staff it is unlikely to be staffed with trained experts.").

[42]Jason M. Roberts, *The Effect of Ballot Type on Congressional Elections, 1946–2006* 13 (paper prepared for delivery at the 2008 annual meeting of the Midwest Political Science Association), *available at* < http://www.unc.edu/∼jmr08/UNC/Working_Papers_files/ballot_type.pdf > (hereinafter "Roberts I") (Fig. 3, "Ballot Type by Year, 1946–2006"). For 1946, the chart in Fig. 3 shows party column ballots in use in approximately 235 U.S. House Districts, with office block ballots in use in approximately 180 U.S. House Districts. By 2006, things had switched, and the chart shows nearly 250 House Districts using office block ballots, and less than 150 using the party column ballot. *See also* Jason M. Roberts, *Bicameralism, Ballot Type, and Split-Ticket Voting* 14 (2009), *available at* < http://www.vanderbilt.edu/csdi/archived/Bicameralism%20papers/jason%20roberts.pdf > (hereinafter "Roberts II") (Fig. 4, "Ballot Type by Year, 1888–2008"). Fig. 4 is a chart showing changes in slate ballots v. office block ballots, showing more states using slate ballots from approximately 1900 to 1975.

[43]A sample slate ballot for Hunterdon County, New Jersey, for the 2009 General Election, is available at < http://www.co.hunterdon.nj.us/election/2009general/SampleBallots/GlenGardner.pdf >.

for each candidate listed on the slate.[44] Slate ballots make rotation difficult, although at least one state does use rotation with a slate ballot, rotating slates rather than candidates.[45]

More states now use the "office block" style of ballot, in which the primary organizing principle is the set of contested offices rather than the set of political parties.[46] Office block ballots are amenable to rotation in a way that slate ballots are not, because the names of the candidates for each office can easily be rotated independently of the names for another office. Fortunately, over the past 30 years or so, many states have moved from slate ballots to office block ballots.[47] Accordingly, now may be a particularly good time to implement ballot rotation on a wider scale.

B. Current state laws governing order of candidate names on ballots

State, rather than federal, officials usually decide whether to use ballots that are slate or office block, fixed-position or rotated.[48] State ballot ordering laws remind one of Tolstoy's unhappy families;[49] each state seems to order its ballots in its own way, although there are a few patterns worth noting. On fixed-position ballots, some states will assign the top position on the basis of popularity, perhaps to the party that received the most votes in a particular contest (often governor) in a previous election.[50] In other states, the top two positions are given to the top two parties, and then places on a second tier, if needed, are given to less popular parties using various methods.[51] Other states use some random method of choosing among all candidates for the order on a fixed-position ballot.[52]

States implement ballot rotation in several different ways as well. Some states use precinct-level rotation or some other "micro-rotation system"; others use "macro-rotation systems,"

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[44]Roberts I, *supra* note 42, at 9 (noting that "the party column ballot organizes the ballot by party and thus encourages voters to weight party identification more heavily in their decision calculus thus producing less ballot roll-off"). Admittedly, straight-ticket ballots can cause other problems, particularly so-called "straight-ticket vote with exception" ballots. *See* text accompanying note 117; *see also* HERRNSON ET AL., *supra* note 18, at 78–80; Niemi and Herrnson, *supra* note 13, at 320–21 (describing the often complex and confusing instructions that accompany straight-party ballots).

[45]*E.g.*, N.H. REV. STAT. ANN. § 656:5 ("The names of all candidates nominated in accordance with the election laws shall be arranged upon the state general election ballot in successive party columns.…The position of party columns shall be rotated on the ballots used so that each party column shall appear thereon, to the extent practicable, an approximately equal number of times in the first, last, and each intermediate column position across the state, without requiring more than one unique column order or ballot format for each town, ward, or unincorporated place.").

[46]*See, e.g.*, HERRNSON ET AL., *supra* note 18, at 33. A sample of an office block style ballot, for the November 2012 General Election in King County, Washington, is available here: < http://your.kingcounty.gov/elections/2012nov-general/docs/leg1sample.pdf >.

[47]Roberts II, *supra* note 42, at 14 (Fig. 4, "Ballot Type by Year, 1888–2008," showing office block ballots in use in approximately 45 states, with party column ballots in use in approximately five states).

[48]*E.g.*, Nathaniel Persily, *"Celebrating" the Tenth Anniversary of the 2000 Election Controversy: What the World Can Learn from the Recent History of Election Dysfunction in the United States*, 44 INDIANA L. REV. 85, 85–86 (2010) ("Most decisions concerning election administration are made at the local, usually county, level. Localities are most

often in charge of decisions concerning ballot design and technology, as well as those dealing with polling place allocation and administration. The result is a patchwork quilt where the quality of democracy often varies according to the fortuity as to where one lives.") (footnotes omitted).

[49]Leo Tolstoy, ANNA KARENINA ("Happy families are all alike; every unhappy family is unhappy in its own way.").

[50]Maryland law assigns the first row or column on the ballot to "the majority party," which it defines by the number of people registered with the party. Other parties follow in order of popularity. MD. ELECTION LAW CODE ANN. § 9-210. Arizona law assigns positions based on the votes cast in the most recent gubernatorial election. ARIZ. REV. STAT. § 16-502(E). Although incumbent-first statutes have been found unconstitutional (*e.g., Gould v. Grubb*, 536 P.2d 1337, 1339 (Cal. 1975); *McClain v. Meier*, 637 F.2d 1159, 1167 (8th Cir. 1980)), incumbent-first ballots are still in use in Massachusetts, which uses office block ballots and heads each contest list with the name(s) of any incumbent(s), designated as such. Candidates of "political parties" (as defined in state law) follow in alphabetical order, with candidates who are not of political parties following those, also in alphabetical order. MASS. ANN. LAWS ch. 54, §§ 41A, 42.

[51]*E.g.*, COLO. REV. STAT. § 1-5-404. Colorado actually creates three tiers of candidates. The first tier contains the "names of the candidates of the major political parties…in an order established by lot"; the second tier contains the names of the candidates of "the minor political parties," also in an order established by lot; the third tier contains the candidates of the "remaining political organizations," again, ordered by lot.

[52]*E.g.*, OREGON REV. STAT. § 254.155 (after the identification of a random alphabet, "[t]he county clerk shall arrange by surname the names of the candidates on the ballot in the random order of the letters of the alphabet completed by the Secretary of State under subsection (1) of this section.").

rotating across larger units such as assembly districts.[53] Some states implement rotation in their primary elections but use fixed-position ballots in the general election.[54] Interestingly, voters in New York State primaries use fixed-position ballots *outside* New York City, but the law mandates rotation on primary ballots *in* New York City.[55]

Only a few states use micro-rotation, or rotation by small electoral units. Professor Jon Krosnick, who has done significant work on political and psychological issues in voting and survey design, argues (with others) that micro-rotation is the best method, and that states should rotate candidate names "by precinct or more frequently."[56] This method is most effective because even local contests take place over a large number of precincts, and thus precinct-level rotation has a good chance to distribute more fairly the benefits and burdens of each position in the contest. Perhaps obviously, the greater the number of precincts a contest includes, the more effectively precinct-level rotation can mitigate the impact of position-influenced votes. States that use precinct-level rotation or better—in at least some elections—include Ohio, Montana, North Dakota, and Idaho.[57]

Legislators show by their behavior—both in the laws that they enact and the way that they run for office—that they believe in the existence of at least one kind of position-influenced vote: primacy-effect votes. Many state legislatures have passed laws ensuring that the top spot on the ticket is reserved for one of the two major parties.[58] In Australia, when candidate names were organized in alphabetical order, political parties began to show

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[53]*E.g.*, OHIO REV. CODE ANN. § 3505.03 mandates that "[t]he names of all candidates for an office shall be arranged in a group under the title of that office, and, except for absentee ballots or when the number of candidates for a particular office is the same as the number of candidates to be elected for that office, shall be rotated from one precinct to another." California, in contrast, uses a randomized alphabet, but it implements a "macro-rotation" system that rotates names by Assembly district. *See* CAL. ELEC. CODE § 13111 ("In the case of all other offices, the candidates for which are to be voted on throughout the state, the Secretary of State shall arrange the names of the candidates for the office in accordance with the randomized alphabet as provided for in Section 13112 for the First Assembly District. Thereafter, for each succeeding Assembly district, the name appearing first in the last preceding Assembly district shall be placed last, the order of the other names remaining unchanged.…If the office is to be voted upon wholly within, but not throughout, one county, as in the case of municipal, district, county supervisor, and county central committee offices, the official responsible for conducting the election shall determine the order of names in accordance with the randomized alphabet as provided for in Section 13112."). California's system may mitigate electoral impact for statewide candidates, but state law does not require rotation for candidates whose jurisdiction is entirely within an assembly district.

[54]ARIZ. REV. STAT. § 16-464 (indicating rotation for primary elections: "[T]he names of all candidates for the nomination shall be so alternated upon the ballots used in each election precinct that the name of each candidate shall appear substantially an equal number of times at the top, at the bottom and in each intermediate place of the list or group of candidates in which

they belong.…In elections in which paper ballots are used, the ballots shall be printed and bound so that every ballot in the bound blocks shall have the names in a different and alternating position from the preceding ballot."); ARIZ. REV. STAT. § 16-502 (indicating fixed position slate ballots for general election: "The lists of the candidates of the several parties shall be arranged with the names of the parties in descending order according to the votes cast for governor for that county in the most recent general election for the office of governor, commencing with the left-hand column.").

[55]McKINNEY'S ELECTION LAW § 7-116(6) (providing that rotation is to be implemented as an "additional provision" in primary elections in New York City); *see also Koppell v. New York State Bd. of Elections*, 108 F. Supp. 2d 355, 360 (S.D.N.Y. 2000) (finding constitutional a primary ballot system that mandates a lottery in the 57 counties outside of New York and rotation within the city of New York).

[56]Krosnick et al., *supra* note 22, at 51–74. Of course, rotation mitigates harm caused by position-influenced votes, but does not prevent it entirely. If a candidate appears in a disfavored position in a precinct that contains mostly supporters of that candidate, the candidate will lose more votes than if the candidate appears in a disfavored position in a precinct in which the candidate has few supporters. As long as the rotation pattern is random, however, any unevenness will likely be equalized.

[57]*E.g.*, OHIO REV. CODE ANN. § 3505.03 (office type ballot indicating rotation by precinct); IDAHO CODE § 34-903 (2011) (indicating secretary of state will designate rotation method). *See also* Krosnick et al., *supra* note 22, at 53.

[58]*E.g.*, COLO. REV. STAT. § 1-5-404 (sorting candidates into three tiers, with the first tier reserved for "the two major political parties," in an order established by lot).

a marked preference for candidates whose surnames were in the first third of the alphabet.[59]

In a well-known incident in Illinois, candidates who were told that their position on the ballot would depend on when they filed their petitions for candidacy decided to camp out overnight at the office of the Secretary of State to try to get that coveted first position.[60] Plaintiffs challenged the ballot-ordering decisions of the Illinois Secretary of State, who admitted in testimony that he gave the top position purposefully, in part by arranging a special mail drop for preferred candidates.[61] In its decision, the Seventh Circuit referred to the testimony of expert witnesses as to benefits of the top position, then commented on the silent but much louder testimony of the politicians' behavior:

> The Secretary of State, those candidates who went to some trouble to have their petitions in the weekend mail at Springfield, and the substantial number of candidates or representatives who spent a wakeful Sunday night in the capitol corridors have all attested by their actions that there is an advantage in being first on the ballot.[62]

As others have noted, state laws governing ballot design seem to operate based on the assumption that primacy effect exists, and that it changes the outcome of elections.[63] Indeed, even if the impact of primacy-effect votes were a fallacy, implementing rotation might be worthwhile simply because it would increase the appearance of electoral integrity.[64]

Some may argue that position-influenced votes are not a significant enough problem to require a solution. Many studies show that primacy-effect votes, for example, make less of a difference in partisan and top of the ticket contests and have the biggest impact in non-partisan and bottom of the ticket contests.[65] These seemingly less-significant contests, however, create elected officials who develop name recognition and political clout that make them more attractive top-ticket candidates in later years. Just as small differences in vote totals can make a big difference in election results, winning small contests in one election can affect the result of a big contest in a later election.[66] Further, as Meredith and Salant noted in their 2007 study of council and school board elections, "a good deal of local governmental policies"

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[59]Amy King and Andrew Leigh, *Are Ballot Order Effects Heterogeneous?* 90 Soc. Sci. Q, 71, 73 (Mar. 2009) ("Mackerras (1970) has shown that due to firm belief in the power of the 'donkey vote' and a desire to maximize their candidates' chances of being placed high in the ballot order, political parties actively chose candidates with surnames early in the alphabet (see also Orr, 2002). Using data from the 1974, 1977, and 1980 Australian federal elections and the 1974 British general election, Kelley and McAllister (1984) estimated that having a surname in the first third of the alphabet was worth an additional 1.3 percentage points for Australian candidates, but had no effect on candidates in the British election. They conclude that one possible explanation for this difference may be the fact that voting is compulsory in Australia but not in Britain.") At least partly in response to concerns about primacy-effect votes, the practice of alphabetical ordering was abandoned in 1984. *Id.*
[60]*Weisberg v. Powell,* 417 F.2d 388, 390 (7th Cir. 1969). In California, where the top of the ballot is awarded based on a special drawing that creates a new "alphabetical order," the board of elections issues a press release when the drawing occurs, which may give added emphasis to the lottery winners and added name recognition. John Maurelius, *The Skirmishing Begins; Campaign's Opening Salvos Unleashed on TV Talk Shows*, San Diego Union-Trib. (Aug. 11, 2003) (discussing lottery drawing for California gubernatorial recall election and noting that "[w]ith more than 193 candidates running…position on the ballot is crucial").

[61]*Weisberg v. Powell*, 417 F.2d at 390. When faced with inevitable ties in time of filing, the Secretary of State chose which candidates would receive the coveted top spot. *Id.*
[62]*Id.* at 393.
[63]Ho and Imai, *supra* note 22, at 219 ("Dozens of [U.S.] court decisions and the drafting of electoral statutes in all 50 states rely on a version of the claim that vote shares will accrue to a candidate solely for being listed first on the ballot. And electoral jurisdictions have proposed remedying ballot order effects by instituting some form of rotation or randomization. At the heart of these reform efforts is an assumption of ballot order effects.") (footnotes omitted).
[64]*E.g., Crawford v. Marion County Election Bd.*, 553 U.S. 181, 190–191 (2008) (noting the importance of state interests in the "integrity" of the voting process and of safeguarding "voter confidence").
[65]*E.g.,* Augenblick and Nicholson, *supra* note 12, at 23 ("We find that voters are more likely to abstain and more likely to rely on decision shortcuts, such as voting for the status quo or the first candidate listed in a contest, as the ballot position of a contest falls.").
[66]*E.g.,* Meredith and Salant, *supra* note 26, at 24 ("In particular, the current use of alphabetical ordering for local elections in many states not only provides the same candidates with the advantage of ballot position in election after election, but also gives the beneficiaries of ballot positioning the subsequent advantage of incumbency.").

are set by "the large number of city council and school board elections nationwide."[67] Thus, rotation is important not only because it may have an impact in close high-profile contests, but also because it may promote fair results in down-ticket contests, contests whose results have a large impact on the governments—and the governing—of the communities we live in.

III. HOW BALLOT POSITION AFFECTS VOTERS AND VOTING

Ballot order and ballot design can have an impact on who voters decide to vote for or how accurately they cast their ballots, and thus, an impact on who they actually vote for. As noted above, these position-influenced votes fall into three categories: (A) primacy-effect votes, (B) proximity-mistake votes, and (C) ballot-flaw-induced votes.

The existence of position-influenced votes is not surprising. As the author of *Design for Democracy* has noted, "[m]any ballot design problems derive from the simple fact that U.S.

elections are complicated. The tendency of our political system to put many candidates and issues before the electorate can create a burden for voters and election administrators."[68] For example, in the 2012 general election, voters in a precinct in Franklin County, Ohio faced a ballot containing 31 contests.[69] Further, many voters are only marginally familiar with the equipment on which they vote. Even diligent voters typically cast ballots no more than twice per year, which hardly provides an opportunity to become an expert on a particular piece of voting technology. The fact that each county may use a different type of voting technology means that even moving a short distance could result in having to become acquainted with a new voting system.[70] It is therefore not unremarkable that voters would make mistakes when voting, and that some might use time-saving methods—consciously or unconsciously—to help them vote more quickly.[71] Indeed, both state election laws and court decisions have acknowledged the peculiar vulnerabilities of voters on Election Day.[72]

In lawsuits claiming that primacy-effect votes create a constitutional problem, some courts have

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[67]*Id.* at 3, 24 (concluding that "[i]n more than five percent of the California city council and school board elections in our dataset, the candidate listed first on the ballot won office as a result of the ballot ordering," and observing that "[g]iven the large number of city council and school board elections nationwide which do not use rotated or randomized ballots, a good deal of local governmental policies are likely being set by individuals elected only because of their ballot position").

[68]LAUSEN, *supra* note 28, at 15.

[69]Precinct 60-F in Franklin County (copy of ballot on file with the author), *available at* <http://vote.franklincountyohio.gov/voter/ballots/SAMPLE_0385.pdf>; *see also* Niemi and Herrnson, *supra* note 13, at 325 (observing the number of constraints that United States election systems have as compared to "smaller, unified systems").

[70]Based on census data from 2000 to 2006, the Brennan Center reported that more than 29 million people of voting age move each year, indicating that they will likely face a voting system different from the one they had used previously. NORDEN ET AL., *supra* note 12, at 10.

[71]*E.g.,* Miller, *supra* note 39, at 381–85 (discussing how voters use cues and heuristics to save time and energy when making voting decisions) (citations omitted).

[72]It is common for states to have laws that restrict campaigning within a certain zone around the polling places; some may even restrict the wearing of t-shirts, buttons, and the like. *E.g., Garionis v. Newton*, 827 F.2d 306, 309 (8th Cir. 1987) (finding that an officer acted reasonably when he arrested a voter under an anti-electioneering statute when the voter refused to remove a political button at the polling place). *See also Cobb v. Thurman*, 957 So. 2d 638 (Fla. Ct. App. 2006). In *Cobb*, the court analyzed how best to provide information for voters when the Republican candidate on the ballot (Foley) had withdrawn from the contest. The Republican Party had substituted Negron, and votes cast for Foley would be counted for Negron. The court analyzed a state statute requiring "neutrality" and rejected as invalid a notice that advised "that any vote cast for Foley would be counted as a vote for Negron," observing that the notice "made no mention of the other two candidates on the ballot." *Id.* at 640. The court found that this notice "may suggest favoritism on behalf of the Republican candidate [because] these are the last names a voter will see prior to going into the voting booth. The mention of the Republican candidate to the exclusion of the Democrat or the independent candidates may be considered to be an implied endorsement." *Id.* at 646. The court found acceptable a notice that mentioned the names of all three candidates. *Id.* at 640.

described voters influenced by primacy effect as "irrational"[73] or "uninformed."[74] But there's a better way to describe these voters: they are human. Indeed, information design and usability scholars who talk about the way people interact with visual information—and about the way they make predictable mistakes during these interactions—use the term "human factors"[75] to describe the issues they study. Information designers use human factors research to promote "[u]ser-centered design, or human-centered design," which "places the end user at the center of the design process."[76] Thus, "information design focuses on the accurate representation of specific knowledge sets and the unique needs of the end user receiving that content."[77] Their goal is "to create artifacts that enhance the way people work, learn, and play—rather than forcing them to conform to new or unfamiliar skill sets and learning methods."[78] Human factors researchers seek to increase the degree to which "individuals find it easy and satisfying to use systems and to perform the expected tasks accurately and within a reasonable amount of time."[79] Accordingly, those arguing in favor of rotational schemes would do well to go beyond arguments based on primacy effect voting and argue that rotation is necessary because of the human factors-type research that shows that both well designed and badly designed ballots can predictably lead to certain voter behaviors.

The science of behavioral economics also offers new justifications for changing ballot ordering laws. Behavioral economics makes clear how predictably human behavior is influenced by seemingly innocuous stimuli. In 2008, two books were published—*Nudge*, by Sunstein and Thaler, and *Predictably Irrational*, by Ariely—that explain behavioral economics to non-academic audiences.[80] These books discount the theory that human beings are perfectly rational actors – called "Econs" in Sunstein and Thaler's work. Econs consider all of their choices carefully and always act in their own best interests. Instead, Sunstein and Thaler note, we are not Econs but "Humans": imperfect creatures who often act for irrational reasons and can often be led to make certain choices by avoidable or unavoidable "nudges." These nudges are built into the choice mechanisms that are the inevitable part of any decision we must make.[81] Even though nudges do not *force* us to make certain choices, they lead, or "nudge" us to make certain choices in ways that we must expend energy to resist. Because resisting nudges may impose costs in time, cognitive energy, and reputation that not every chooser is willing to expend, nudges can have a significant impact on the choices we make.[82]

Some aspects of election law seem to presume that voters are what I will call "Votons." Like

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[73]*E.g., New Alliance Party v. New York State Bd. of Elections*, 861 F. Supp. 282, 297 (S.D.N.Y. 1994) (holding constitutional state election law that used separate methods to determine ballot contest location of established political parties as opposed to independent parties and noting that "an irrational vote is just as much of a vote as a rational one") (citation omitted); *see also* Miller, *supra* note 39, at 380–89 (discussing primacy effect and its impact on voter behavior in an article whose title refers to "*the Irrational Voter*").

[74]*E.g., Sonneman v. State*, 969 P.2d at 640–41 (upholding Alaska's fixed-position ballot statute and noting that "the concept of the people's will encompasses all who vote, those who are careless and uninformed as well as those who are more thoughtful and knowledgeable").

[75]The field of "human factors" has been described as "that field which is involved in conducting research regarding human psychological, social, physical, and biological characteristics, maintaining the information obtained from that research, and working to apply that information with respect to the design, operation, or use of products or systems for optimizing human performance, health, safety, and/or habitability." JAMES H. STRAMLER, THE DICTIONARY FOR HUMAN FACTORS/ERGONOMICS (Boca Raton, LA: CRC Press, 1993) (cited at the website for the Human Factors and Ergonomic Society, *available at* <http://www.hfes.org/Web/Educational-Resources/HFEdefinitionsmain.html>).

[76]JENN VISOCKY O'GRADY AND KEN VISOCKY O'GRADY, THE INFORMATION DESIGN HANDBOOK 25 (HOW Books 2008).

[77]*Id.* at 6.

[78]*Id.* at 25.

[79]HERRNSON ET AL., *supra* note 18, at 3 (citation omitted).

[80]THALER AND SUNSTEIN, *supra* note 7; DAN ARIELY, PREDICTABLY IRRATIONAL: THE HIDDEN FORCES THAT SHAPE OUR DECISIONS (Harper 2008).

[81]THALER AND SUNSTEIN, *supra* note 7, at 3 ("A choice architect has the responsibility for organizing the context in which people make decisions.…[M]any…people turn out to be choice architects, most without realizing it. If you design the ballot voters use to choose candidates, you are a choice architect.…A good rule of thumb is to assume that 'everything matters.' In many cases, the power of these small details comes from focusing the attention of users in a particular direction.").

[82]*See* ARIELY, *supra* note 80, at 241, 237 (observing that "[b]ehavior economists, on the other hand, believe that people are susceptible to irrelevant influences from their immediate environment (which we call context effects), irrelevant emotions, shortsightedness, and other forms of irrationality," and that "[i]n essence, people, particularly those with a high need for uniqueness, may sacrifice personal utility in order to gain reputational utility").

Econs, Votons always act with perfect thoughtfulness, rationality, and execution. Votons arrive at the polls on Election Day having already decided exactly who to vote for, and whether they are going to vote in every contest. Votons interact with the ballot only to execute their perfectly formed decisions, and they are unlikely to be influenced by the way the ballot is designed. Further, if they are confused by the ballot or believe they have made a mistake, Votons, who are never embarrassed, will always ask the poll workers for help. Votons also have unlimited time and equal interest in all of the contests, so if a Voton makes a mistake—in any contest from President to County Coroner—it's no trouble to spend a minute or two to correct it.

Unfortunately, Votons have very low turnout on Election Day; Humans are much more likely to show up at the polls. While some Humans arrive at the polls with a list of candidates for whom they intend to vote, not all of them do, and some may have only an incomplete list. Further, Humans do not have unlimited time and unlimited devotion to all of the contests on the ballot, and they get embarrassed—i.e., they worry about expending reputation costs—if they make a mistake and are uncertain about how to fix it.

Humans may cast ballot-flaw-induced votes, as many did when voting on the infamous butterfly ballot that gained notoriety in the 2000 election. But position-influenced votes are even more likely to result from an unavoidable reality of using a ballot: some names or choices are going to take less time to find, or be easier to vote for accurately, and other names or choices are going to be harder to find, or take more time to vote for accurately.

If Howard Human decides to vote in a contest that he does not know or care much about, he may be influenced by primacy effect—that is, he may be a little more likely to decide to vote for the first choice listed, because it is easier or for a variety of reasons.[83] On the other hand, even in a contest that he knows and cares about, he may have a problem if his candidate's name is in the middle of a long (or even a short) list. In that situation, Howard may cast a proximity-mistake vote: he may punch the button of the candidate whose name is just above or just below the name that he intended to vote for.[84] If Howard is voting on a badly designed ballot, the ballot may lead him to cast a ballot-flaw-induced vote.[85] And even if Howard is made

aware of that mistake, he may be unlikely to correct it in certain circumstances. For example, if that contest is less important to him, he is going to be less likely to spend the time costs (or if needed, the cognitive or reputation costs) to fix the mistake.[86]

Rotation can mitigate the electoral impact of all three kinds of position-influenced votes. Notably, giving Human voters the opportunity to correct ballot mistakes—while an important reform—is not sufficient to counteract the impact of position-influenced votes.

A. Primacy-effect votes

A "primacy-effect vote" results when a voter is influenced to decide to cast a vote for a particular candidate—usually the first candidate listed—by that candidate's position on the ballot. A common scenario for a primacy-effect vote occurs when a voter who has low information about a contest (or about the candidates in a contest) decides to vote in that contest. For example, when Helen Human entered the voting booth on a recent Election Day, she had not thought much about the contest for the position of Clerk of Courts. Helen saw that the first name on the list of choices was that of *Melissa Jackson.* She recognized the name, and she had some positive association with it because of television advertising and because of some campaign literature she had received in the parking lot of the polling location. Accordingly, Helen selected Melissa Jackson without even

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[83]*E.g.*, David Brockington, *A Low Information Theory of Ballot Position Effect*, 25 POL. BEHAV. 1, 4–5 (2003); *see also* HERBERT A. SIMON, ADMINISTRATIVE BEHAVIOR: A STUDY OF DECISION-MAKING PROCESSES IN ADMINISTRATIVE ORGANIZATION 118–20 (Free Press 4th ed. 1997).

[84]Luttmer and Shue, *supra* note 23, at 16, 28 (noting that in California recall election study, the results also showed differences based on technology, indicating that "0.197% of voters using punch card technology misvote for each adjacent candidate compared to only 0.100% and 0.065% of voters using optical scan and touch screen technology respectively.").

[85]*E.g.*, Wand et al., *supra* note 13, at 803 (conducting intensive study ballots in Palm Beach County and concluding that "the butterfly ballot caused systematic voting errors in [Palm Beach County]").

[86]HERRNSON ET AL., *supra* note 18, at 77. The authors found that accuracy rates drop 5–12 percentage points when voters change a vote, noting that on various systems, some voters were "unwilling or unable" to make the change, or did not make the change "[i]n response to the extra work involved." *See also* note 157 *infra,* and accompanying text.

looking at the names of the other candidates for that office.

Studies going back decades draw conclusions about the impact of ballot position on voter decision-making.[87] The main focus of most of these studies is the impact of primacy effect, i.e., the biasing effect of the first position on the ballot.[88] Although most agree that primacy effect is significant in non-partisan contests, some have found less impact in partisan contests.[89] In recent years, some have questioned primacy effect impact as a whole, wondering whether the impact is significant enough to require court-ordered "cures."[90] In contrast, others have gone beyond primacy effect, studying the impact not only of fixed-position ballots but of fixed-order ballots or of fixed contest orders on those ballots.[91]

Information design experts and political scientists believe that primacy-effect votes can have a significant impact on some elections. Krosnick et al. believe that primacy effect may contribute 3–5% of the total to the first-listed candidate.[92] Brockington argues that primacy effect can give a first-listed candidate a bump of .7% to 5.2%.[93] Ho and Imai conclude that in general elections, ballot order "substantially" affects minor parties but has "inconclusive" effects on major candidates.[94] In primaries, however, they conclude that "being listed first significantly increases vote shares for all candidates," noting that "ballot order might have changed the winner in as many as 12 percent of all primary contests [that the authors] examined."[95] Koppell and Steen found that the votes "added" by primacy effect were enough to change the outcome of the election in 7 of the 79 contests they studied.[96] In a 2007 study that focused on more than 5,000 local, multi-selection contests such as city council and school board elections, Meredith and Salant concluded that in over 5% of the elections, the candidate listed first won the contest "as a result of ballot position."[97]

Primacy effect may have both psychological and physical causes. First, when we need to make decisions in certain contexts, we may resort to a time-saving strategy that social scientists call "satisficing."[98] Voters who "satisfice" select the first satisfactory candidate on the list and then move on. Particularly when the stakes are lower—i.e., when they do not see that the results of their choice will affect them significantly— they may decide not to look at the whole list.

Instead, they will look at the first choice and ask, in essence, "Is this choice good enough, or do I have to spend more time and energy and go on to the next choice on the list?" Some psychologists describe satisficing voters as having a "confirmatory bias": they look at the first name on the list

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[87]*E.g.*, HENRY M. BAIN, JR. AND DONALD S. HECOCK, BALLOT POSITION AND VOTER'S CHOICE: THE ARRANGEMENT OF NAMES ON THE BALLOT AND ITS EFFECT ON THE VOTER 85 (Wayne State University Press 1957) ("We found statistically significant evidence of position effect in primary and non-partisan elections in several Michigan cities…").

[88]*E.g.*, Miller and Krosnick, *supra* note 8, at 293–94 ("One psychological theory of order effects predicts 'primacy effects,' which are biases toward selecting the first object considered in a set.") (citations omitted); Augenblick and Nicholson, *supra* note 12, at 23 ("We find that voters are more likely to abstain and more likely to rely on decision shortcuts, such as voting for the status quo or the first candidate listed in a contest, as the ballot position of a contest falls"); Koppell and Steen, *supra* note 17, at 269.

[89]*E.g.,* Ho and Imai, *supra* note 22, at 230, 236 (finding a primacy effect between 1% and 2% in primary contests, but no primacy effect for major candidates in general elections).

[90]R. Michael Alvarez, Betsy Sinclair, and Richard L. Hasen, *How Much Is Enough? The "Ballot Order Effect" and the Use of Social Science Research in Election Law Disputes*, 5 ELECT. L. J. 40, 53 (2006) (criticizing methodology of some ballot-order studies and arguing that courts should not overturn elections based on social-science research and should not order rotation due to costs and possible "voter confusion"); *but see* Elizabeth Garrett, *Democracy in the Wake of the California Recall*, 153 U. PA. L. REV. 239, 257 (2004) (noting the lack of voter confusion in the California recall election (with 135 candidates) and observing that "the recall experience suggests that most voters are able to cope with some complexity in ballots"). Garrett did not mention evidence of any confusion in the recall caused by California's rotation system.

[91]Meredith and Salant, *supra* note 26, at 3 (concluding that voters who must select more than one candidate in a contest (e.g., in a city council contest) may be less likely to vote for a candidate whose name is positioned immediately after that of a very popular candidate); Augenblick and Nicholson, *supra* note 12, at 23 ("We find that voters are more likely to abstain and more likely to rely on decision shortcuts, such as voting for the status quo or the first candidate listed in a contest, as the ballot position of a contest falls.").

[92]Krosnick et al., *supra* note 22, at 66 (results of a study of the 2000 elections in Ohio and North Dakota and reporting primacy effects in two-candidate contests that ranged from 1.41% to 6.32%, with an average of 2.88%).

[93]Brockington, *supra* note 83, at 5.

[94]Ho and Imai, *supra* note 22, at 218.

[95]*Id.*

[96]Koppell and Steen, *supra* note 17, at 267–81.

[97]Meredith and Salant, *supra* note 26, at 15.

[98]Brockington, *supra* note 83, at 4–5; *see also* SIMON, *supra* note 83, at 118–20.

and try to find reasons to confirm a decision to vote for that person.[99]

In the example above, Helen Human used a satisficing strategy to choose the first candidate listed for the position of clerk of courts. Perhaps like many voters, Helen did not believe that the clerk of courts would be likely to have a huge impact on her life, and so she was unwilling to expend significant cognitive energy in choosing a candidate in that contest.

But the mere physical realities of name placement can have an impact as well. Consider the task of choosing one item from a list of three choices. If Helen Human reads a list of three names, she may find it difficult to avoid spending more time thinking about the first name than the others due simply to the physical reality of encountering the top-listed name first. She may be asking herself, "Do I want A? Do I like A better than B? Do I like A or B better than C?" Even if Helen mentally asks herself about each candidate separately (as in "Do I want to vote for A? Or do I want to vote for B? Or do I want to vote for C?"), she cannot help but carry at least some mental residue of the first candidate's name as she moves on to the names of the other candidates.[100] That extra time spent thinking about a candidate can translate to extra votes.

Studies using eye-tracking technology show that people choosing an item from a list spend more time looking at the first item than they do looking at later items.[101] Even though this time difference may be measured in milliseconds, that additional time may provide a meaningful advantage to the first-listed candidate. Some studies show that the average voter spends five minutes or less when voting.[102] Indeed, many state statutes limit time in the voting booth. Louisiana has a strict limit of three minutes; in Ohio the limit is five minutes, but that limit applies only when all voting machines are in use.[103]

Consider that an average general election ballot could ask each voter to execute 30 or more individual voting decisions. "Executing" a voting decision includes time spent deciding on the choice (if any), time spent finding the choice, and time spent actually pushing the button or filling in the bubble to cast the vote. A three-minute limit gives a voter six seconds to execute each choice on a 30-contest ballot, and even a five-minute limit would allow only ten seconds to execute each choice. If each

candidate whose name appears at the top of the list gets even one extra second of the voter's "eye time," just the extra time looking at those first candidates could use up 30 seconds, or 10% of the time the average voter spends voting. Thus, the top-listed candidate gets a tangible bonus by being on the voter's radar both sooner and longer. That extra time can predictably result in extra votes.[104]

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[99]Miller and Krosnick, *supra* note 8, at 293–94 ("Specifically, people usually begin a search of memory for information about an object by looking for reasons to select answer choices rather than reasons not to select them.") (citation omitted).

[100]*See* Miller and Krosnick, *supra* note 8, at 294 ("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."). *See also* Ho and Imai, *supra* note 22, at 220 (noting that under some behavioral analytical models, "a voter will choose a candidate without reading the remainder of the ballot if the perceived marginal benefit of subsequent candidates, discounted by the probability of the pivotal vote, exceeds the cognitive cost of processing the merits of an additional candidate") (citations omitted).

[101]Mirta Galesic, Roger Tourangeau, Mick P. Couper, and Frederick G. Conrad, *Eye-Tracking Data: New Insights on Response Order Effects and Other Cognitive Shortcuts in Survey Responding*, 72 PUB. OPINION Q. 892 (2008).

[102]*E.g.*, William A. Edelstein and Arthur D. Edelstein, *Queuing and Elections: Long Lines, DREs and Paper Ballots, Proceedings of the 2010 Electronic Voting Technology Workshop/Workshop on Trustworthy Elections*, *available at* <http://www.usenix.org/event/evtwote10/tech/full_papers/Edelstein.pdf> (assuming an average voting time of five minutes); *see also* Dwayne G. Norris and Christine A. Paulsen, New York State Voter System User Rate Assessment Study, Research Report, American Institutes for Research, at 22, Exhibit 6 (Dec. 11, 2006), *available at* <http://www.elections.ny.gov/NYSBOE/hava/DRAFTAIRSTUDY.pdf> (showing approximately 3–5 minute mean voting time for voters without an identified disability).

[103]LA. REV. STAT. § 18:563 ("A voter shall not remain in a voting machine longer than three minutes. If a voter fails to leave a voting machine promptly after a commissioner has notified him that three minutes have elapsed, the commissioners shall have the voter removed from the voting machine."); OHIO REV. CODE § 3505.23 ("No voter shall be allowed to occupy a voting compartment or use a voting machine more than five minutes when all the voting compartments or machines are in use and voters are waiting to occupy them.").

[104]The likelihood of casting a primacy-effect vote may increase as the voter moves down the ballot. Scholars have theorized that this effect occurs in part because the "down-ticket" contests are less important to voters, and that voters who care less about a contest are more likely to "fall off" (i.e., not cast a vote) or, due to time concerns that increase as they move down the ballot, they may use a time-saving strategy such as voting for the first name on the ticket. *E.g.*, Augenblick and Nicholson, *supra* note 12, at 23. *See also* THALER AND SUNSTEIN, *supra* note 7, at 3 ("A good rule of thumb [for a choice architect] is to assume that 'everything matters.' In many cases, the power of these small details comes from focusing the attention of users in a particular direction.").

Some believe that fixed-position ballots in a 2010 Senate primary contest may have given a primacy effect edge to a South Carolina democrat named Alvin Greene, who was an "unknown, unemployed, inarticulate Army veteran who gave no speeches, distributed no literature, and won no endorsements."[105] Krosnick theorizes that Hillary Clinton's 2008 New Hampshire primary victory over Barack Obama may have resulted from the fixed-position ballot that put her in the fourth position and Obama in the 18th position.[106]

No matter the cause of primacy effect, rotation can mitigate its impact by giving each candidate an equal chance to gain the benefits of the top position on the ballot. In a state with precinct-level rotation, every candidate would get approximately equal "air time" in front of voters. To the extent that familiarity breeds votes, all candidates should get an equal chance in the voting booth to influence voters to cast votes for them. Precinct-level ballot rotation gives candidates that equal chance.

Even with the controversy about the extent of its impact, primacy effect might on its own provide sufficient justification for ballot rotation. The two other categories of position-influenced votes, however, provide even more justification for making this change in ballot design universal.

B. Proximity-mistake votes

A second kind of position-influenced vote is known as the proximity-mistake vote. Unlike primacy-effect votes, which are accurately cast, proximity-mistake votes are *miscast* votes. As discussed in the next section, some miscast votes are caused by design flaws. But design flaws are not the only reason that voters make mistakes. They make mistakes because they are human, and humans make mistakes. Unlike residual votes, proximity-mistake votes are more difficult to find when analyzing election returns because they do not present a measurable statistic such as undervotes or overvotes. Further, voters may not notice pushing the wrong button or filling in the wrong bubble while trying to get through 30 or more voting decisions on a crowded ballot.

In this century, voter mistakes have received more attention. The California gubernatorial recall of 2003, which included over 100 candidates for governor, allowed social scientists to gather some interesting data because it occurred in a state with macro-rotation.[107] Researchers found that candidates who had few supporters got a bump in votes when their names appeared adjacent to the name of one of the three highest vote-getting candidates.[108]

In that study, scholars studied votes on ballots on which the candidates for governor were listed in multiple columns.[109] The authors analyzed increases in vote share that minor candidates received when their names were located above (north), below (south), to the right (east), or to the left (west) of one of the three so-called "major" candidates.[110] They concluded that "misvoting is strongest when a minor candidate is east adjacent [i.e., to the right of a major candidate] and weakest when a minor candidate is west adjacent [i.e., to the left of a major candidate]; 0.143% of voters misvote for east adjacent candidates, only 0.038% of voters misvote for a west adjacent candidates, while 0.082% and 0.111% of voters misvote for north

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[105]Nick Summers, *Can Anyone Explain How Alvin Greene Actually Won? Ballot Position? Electronic Prompts? Pondering the Theories Behind an Unlikely Victory,* NEWSWEEK (June 17, 2010), *available at* < http://www.newsweek.com/ 2010/06/17/can-anyone-explain-how-alvin-greene-actually-won .html > . Greene garnered 59% of the 169,542 votes in the contest. *Id. But see* Joseph Bafumi, Michael C. Herron, Seth J. Hill, and Jeffrey B. Lewis, *Alvin Greene? Who? How Did He Win the United States Senate Nomination in South Carolina?,* 11 ELECTION L.J. 358, 368, 377 (2012) (studying the same election and concluding that "Greene benefited slightly" by being listed first, but that "this effect does not appear to have been strong enough, at least in our ballot collection, to have secured Greene's upset").

[106]Jon A. Krosnick, *Ballot Changes Cited in Vote's Discrepancy with Polls*, ABC NEWS, (Jan. 9, 2008), *available at* < http://abcnews.go.com/print?id=4107883 > (cited in Miller, *supra* note 39, at 374).

[107]California law mandates that candidate names be rotated by Assembly District; perhaps obviously, using large units such as assembly districts reduces the benefits that rotation provides. *See* CAL. ELEC. CODE § 13111.

[108]Luttmer and Shue, *supra* note 23, at 17.

[109]*Id.* (concluding that certain demographic groups were more likely to misvote, and that proximity (or "adjacency") rather than name confusion drives misvotes). But the authors included caveats with their demographic analysis: "Even if a demographic characteristic such as low education is correlated with higher levels of misvoting, lack of education may not be the cause of adjacency misvotes. For example, it is conceivable that education is positively correlated with experience taking standardized exams, and experience with standardized exams is what truly reduces levels of misvoting." *Id.* at 21.

[110]Luttmer and Shue, *supra* note 23, at 17, 7 (identifying the three "major" candidates as the three who received the most votes: Arnold Schwarzenegger (R), Cruz Bustamante (D), and Tom McClintock (R)).

and south adjacent candidates respectively."[111] These authors conclude that "misvotes accounted for at least .25% of all votes cast during the Recall Election."[112] Admitting that "this difference in lost votes represents [only] a small fraction of the total vote-share," the authors nonetheless observe that "the loss exceeds the margins of victory in several recent elections, including the presidential election of 2000 and the Washington gubernatorial election of 2004. Thus, adjacency misvoting is powerful enough to determine the outcomes in highly-contested close elections."[113]

The authors admit that the California gubernatorial recall election was an unusual one,[114] with a high number of candidates (135) that is unlikely to be repeated. Nevertheless, this study makes evident the number of proximity mistakes that are not only possible, but probable. The authors recommended future studies to determine "whether misvoting occurs at comparable levels in elections featuring fewer candidates."[115]

And those studies have begun. In a landmark analysis of a variety of election systems, Herrnson et al.

conducted a field experiment with 1,540 subjects and found that 20% of voters made at least one error.[116] Even in the simulated presidential contest, one to three percent of the ballots (the percentage varied from voting system to voting system), contained a proximity mistake ("adjacency error"), that is, a vote for a candidate just above or below the voter's intended candidate in the presidential contest.[117] In a state representative contest, the error rate increased to over 6% on one of the systems.[118]

Further, when voters are not voting in the simplest voting situations, their errors increase. The study showed that voter accuracy declines when voters must select multiple candidates for the same office (as in a city council election), when they try to change a vote after making a selection, or when they use a ballot with certain "straight-party" options, especially ballots that allow a "straight-party vote with exception," which allow voters to override the straight-party choice for some contests.[119] What's worse, if these complications are combined, "accuracy levels drop still

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[111]*Id.* at 16. Note that the results also showed differences based on technology, indicating that "0.197% of voters using punch card technology misvote for each adjacent candidate compared to only 0.100% and 0.065% of voters using optical scan and touch screen technology respectively." *Id.* at 28.

[112]*Id.* at 32.

[113]*Id.* at 32. The authors also observe that: "Numerous presidential, senatorial, and gubernatorial elections have been determined by very slim margins of victory. The margins of victory of the popular vote in the Presidential Elections of 1880, 1884, 1960, and 2000 were all less than one-quarter of a percent." *Id.* at 29. (citing outcomes as officially determined by the Electoral College).

[114]*Id.* at 30 (acknowledging uniqueness of this election and suggesting future research to determine "whether misvoting occurs at comparable levels in elections featuring fewer candidates").

[115]*Id.*

[116]*See* HERRNSON ET AL., *supra* note 18, at 89 (Study of over 1,500 people in simulated voting situation with a variety of voting technologies showed that "roughly 1 in 5 voters made at least one mistake in casting votes for the seventeen offices for which only one candidate was to be selected (or in the case of the presidential election, one team of candidates). Where more than one candidate was to be elected to a given office, or where voters changed a vote, many more errors were committed.").

[117]*See id.* at 82 ("[I]ndividuals voted for the wrong candidate for president more than 2.5 percent of the time on all but one system. That is, at the top of the ticket, voting for an unintended candidate may be a greater problem than overvotes, undervotes, blank, or uncountable ballots.").

[118]*See id.* at 74 (table).

[119]As the authors note, so-called straight-party ballots often contain complicating features. For example, almost all elections

include some non-partisan contests (e.g., judgeships, issue contests), and some voters don't realize that they have not cast a vote in these contests by choosing the straight-party option. The "straight-party with exception" feature confused about half of the voters on one of the tested systems. *Id.* at 78–80. Herrnson et al. do not detail all of the specific errors that occur in the straight-party or straight-party-with-exception ballots. Niemi and Herrnson note that straight-party-with-exception ballot instructions are often confusing or contradictory, and that a variety of voting problems result from the various straight-party options, including residual votes (because voters fail to vote the non-partisan contests) or confusion about how to override the straight-party options. Niemi and Herrnson, *supra* note 13, at 318–21. If bad instructions cause mistaken votes, of course, rotation could mitigate the problem. Two design adjustments could mitigate the other problems noted. If the problem is a residual vote—because the voter did not vote the non-partisan contests after casting the straight party vote—the ballot could be designed so that voters encountered the issue and non-partisan contests on the ballot *before* they encounter the straight-ticket decision. *See e.g.,* Sample ballot for the November 2012 General Election in King County, Washington, *available at* < http://your.kingcounty.gov/elections/2012nov-general/docs/leg1sample.pdf > (on a non-straight ticket ballot, showing issue contests before candidate contests). Voters would then presumably be more likely to vote in those non-partisan contests. If states want to preserve the "straight-ticket-with-exception" option, the best design option might be an electronic ballot designed so that punching the straight-ticket button would populate all of the votes for that party. Voters could then be instructed to review the ballot and change the votes in any contests for which they wanted to vote for the candidate of another party.

further, dipping into the 80–90% range,"[120] which translates, of course, to a 10–20% error rate.

More significantly for candidates and those who support them, the authors conclude that "regardless of their cause, proximity errors will not be distributed equally. The simple fact that candidates appearing at the top (or bottom) of ballots have no one else listed before (or after) them means that they are less likely than other candidates to lose votes as the result of proximity errors,"[121] and indeed, the experiment's results supported this hypothesis.[122] In other words, those casting votes for candidates whose names appeared in the middle positions on the ballot were more likely to make a proximity mistake when voting, i.e., to vote for a candidate adjacent to the candidate intended.

Rotation would reduce the impact of proximity errors. By allowing all candidates to spend equal time in the favored locations and disfavored locations on the ballot, rotation can mitigate the impact of predictable voter mistakes. Herrnson et al. suggest that their experiment gives "election officials concerned with fairness a reason to rotate candidate names in different election precincts."[123] Likewise, legislators and major political parties should support precinct-level rotation statutes, which would help to ensure that each candidate loses as few votes as possible to voter mistakes.

C. Ballot-flaw-induced votes

A third category of position-influenced votes is the ballot-flaw-induced vote, caused by flaws in ballot design. The most famous example, as noted, is the butterfly ballot. But butterfly ballots are not the only badly designed ballots.[124] Other bad designs may mislead voters in other ways, through placement of contests, or through language, directions for voting, or placement of names on the ballot.[125] Professor Susan King Roth, in one of the earliest studies of usability and election systems, found that voters voted in error due to bad design.[126] She conducted a study in which she observed 19 voters as they used a variety of voting technologies, arranged so that participants could vote on equipment set up as it was for Ohio's 1992 general election. She noted that at least three subjects expressed confusion about which button on the electronic ballot corresponded with which candidate in the "Presidential/Vice-Presidential Candidate" section of that ballot:

Referring to presidential candidates Bill Clinton and George Bush, one responded: "The

square next to (candidate) Clinton's name was for the other candidate to the left. The square for Clinton was to the right." Another wrote: "It seemed that the buttons were closer to the adjoining candidate. I tend to vote by president's name but the correct button was closer to the vice president's name."[127]

Roth observed that consequences of these types of ambiguities "could include lost votes and skewing of election results."[128] Ohio uses precinct-level rotation, however, and Roth hypothesized that the rotation scheme acted as a fail-safe, preventing the bad design from having an impact on the election: "[f]ortunately ballot rotation, the sequential rotation of candidate names as required by Ohio law, probably prevented any single candidate from enjoying an advantage."[129]

Some election analysts presume that if mistakes occur when voting—such as when Gore voters mistakenly voted for Buchanan in the 2000 presidential election—the mistakes should be blamed on the voter and not the ballot. If voters have a hard time finding their candidate on the slate and thus choose another or skip the contest, the theory goes, that is because they were not intelligent, did not follow directions properly, or were not sufficiently devoted to their candidate.[130] As a National Institute of Standards and Technology (NIST) study noted in 2004, however, "[i]t is common for users to blame themselves for their inability to accomplish a task

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[120]HERRNSON ET AL., *supra* note 18, at 89.

[121]*Id.* at 71(footnote omitted).

[122]*Id.* at 195, n. 16 (explaining that voters who intended to vote for candidates at the top or bottom of the contest list made fewer proximity errors).

[123]*Id.* at 71.

[124]Sarah P. Everett, *The Usability of Electronic Voting Machines and How Votes Can Be Changed Without Detection* 11 (Thesis of Ph.D Candidate, Rice University, available at <http://chil.rice.edu/research/pdf/EverettDissertation.pdf>) ("poor ballot design is not limited to punch card ballots.…ballot design inconsistencies can serve to confuse users and create additional potential for errors").

[125]*Id.* (citation omitted).

[126]Susan King Roth, *Disenfranchised by Design: Voting Systems and the Election Process*, 9 INFO. DESIGN J. 1, 4–5 (No. 1, 1998), *available at* <http://www.decadeofbehavior.org/policyseminars/er_roth1998.pdf>.

[127]*Id.*

[128]*Id.*

[129]*Id.*

[130]*See generally, e.g.*, *Designers Vote Down "Butterfly" Ballots*, COX NEWS SERVICE (Nov. 21, 2000).

with a given system, even though difficulties experienced may be common across a range of users and the result of correctable usability problems."[131]

Likewise, the Brennan Center, in its publication *Better Ballots*, noted that voting should not measure which candidate has supporters who are best able to figure out the voting technology:

> Some have dismissed the degree to which poor ballot design undermines democracy by arguing that voters only have themselves to blame if they fail to properly navigate design flaws. This is unfair. Candidates should win or lose elections based upon whether or not they are preferred by a majority of voters, not on whether they have the largest number of supporters who—as a result of education and experience—have greater facility navigating unnecessarily complicated interfaces or complex instructions, or because fewer of their supporters are elderly or have reading disabilities. Nor should candidates win elections because ballot designs happened to make it more difficult for voters supporting their opponents to accurately cast their votes.[132]

In other words, these mistakes happened not because the voters were unintelligent but because the voters were human. Most ballots are not designed by professional designers, and most do not take into account "human factor"[133] research. Understanding how humans interact with various systems can allow designers to create ballots that decrease error, while failing to use these designs can increase human error. As the authors of *Better Ballots* indicate, there are many different ways in which ballots can be badly designed: "Many problematic ballot designs present voters with an inconsistent design that leads to mistakes."[134]

That infamous "butterfly ballot" from Palm Beach County, for example, listed half the candidates on the left page and half the candidates on the right page. Voters were to punch one of a series of holes down the center of the ballot to cast their votes for one of the pairs of candidates (i.e., president and vice-president) on either side of the holes. Although the second name listed on the left page was Al Gore, punching the second hole resulted in a vote for Pat Buchanan, whose name was listed first on the right page.

Since the normal "human" way to encounter written materials is to read in a left-to-right, top-to-bottom sequence,[135] many Gore voters would have automatically punched the second button to vote for the name they perceived to be the second name on the list. Some of these Gore voters may never have even noticed the names on the right-hand side of the ballot, nor perceived that those names were connected to the same set of holes that were used for the names on the left-hand side of the ballot. Analysts who studied the Palm Beach ballot estimate that at least 2,000 Gore voters cast their ballots for Buchanan instead.[136]

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[131]Laskowski et al., IMPROVING THE USABILITY AND ACCESSIBILITY OF VOTING SYSTEMS AND PRODUCTS 21, note 9 (National Institute of Standards and Technology Special Publication 500, May 2004).

[132]NORDEN ET AL., *supra* note 12, at 9–10.

[133]*E.g.*, the website of "Human Factors and Ergonomics Society" describes the Society's mission as follows: "The Society's mission is to promote the discovery and exchange of knowledge concerning the characteristics of human beings that are applicable to the design of systems and devices of all kinds. The Society furthers serious consideration of contract about the assignment of appropriate functions for humans and machines, whether people serve as operators, maintainers, or users in the system. And, it advocates systematic use of such contract to achieve compatibility in the design of interactive systems of people, machines, and environments to ensure their effectiveness, safety, and ease of performance." < https://www.hfes .org//Web/AboutHFES/about.html >.

[134]NORDEN ET AL., *supra* note 12, at 28–36 (noting that on one ballot, "[r]eading left-to-right, many voters mistakenly marked the arrow to the right of a candidate's name instead of the arrows to the left. Although the ballot instructions direct voters to complete the arrows to the left of their choices, there are few visual cues on the page. The small amount of space between columns makes it hard for voters to tell which arrow corresponds with the candidate for whom they'd like to vote....It is easier to see where to vote for whom [when] horizontal alignment issues are minimal, especially for paired contests, such as that for President and Vice-President.").

[135]*E.g.*, *id.* at 21 ("Voters reading the ballot in traditional book-form, i.e., from top left to bottom left, followed by top right to bottom right, likely read Gore as the second name and punched the second hole without realizing that the second hole corresponded with a vote for Buchanan.").

[136]Wand et al., *supra* note 13, at 795. Rotation could have significantly mitigated the errors caused by the butterfly ballot. Gore voters would have been much more likely to vote accurately when Gore's name was the first name on the ballot. Likewise, they would have been at least a bit more likely to vote accurately when his name was listed on the right-hand side of the ballot, because their automatic tendency to punch the second name for the second button would have been interrupted. Gore's position as the number two name on the left-hand side was arguably the worst position for him to be in, from a human factors perspective. Although it is impossible to be certain, it is at least plausible that the results of the 2000 presidential election would have been different if Florida ballots had precinct-level rotation. In any event, rotation would have given voters more confidence in the ultimate result.

TABLE 1. BALLOT LISTING "CANDIDATE REMOVED" IN THIRD POSITION

Bush	☐
Kerry	☐
Candidate removed	
Peroutka	☐
Badnarik	☐

TABLE 2. BALLOT LISTING "CANDIDATE REMOVED" IN SECOND POSITION

Kerry	☐
Candidate removed	
Peroutka	☐
Badnarik	☐
Bush	☐

Interestingly, one example of how rotation may have already helped to provide a fail-safe for a bad ballot design was illustrated by a discussion of a specific design problem in *Better Ballots*, although the authors did not explicitly address the benefits of rotation. The report describes 13 separate kinds of ballot-design problems, including a problem described as "Leaving Columns or Rows for Disqualified Candidates."[137] The authors illustrate the problem by discussing the ballot in Montgomery County, Ohio, in 2004. That year, Ralph Nader was disqualified as a candidate for president after several counties in Ohio had programmed their vote-tallying machines to read ballots with his name.[138] Montgomery County, and perhaps some others, replaced the name of Nader and his running mate with the words "candidate removed."[139] Montgomery County, like all Ohio counties, rotates its ballots by precinct, and there were four presidential candidates whose names remained on the ballot; Nader's slot on the ballot made for a total of five presidential slots. In 1/5 of the precincts in that county, therefore, "candidate removed" was the top "candidate" listed; in 1/5 of the precincts, "candidate removed" was listed second, and so on. In 1/5 of the precincts, "candidate removed" was listed third. The ballot in those precincts, therefore, probably looked something like the ballot in Table 1.

The study noted that there were high residual vote rates in the 1/5 of the precincts in which "candidate removed" appeared in the third slot. The authors theorized that voters chose a candidate from the first two names on the list (Bush and Kerry) and then spoiled their ballots by selecting another candidate from the second two names (Peroutka and Badnarik).[140]

The residual vote rate was much lower in other precincts, and the lower rate may well have resulted from a less confusing ballot. For example, in 1/5 of the precincts, the ballots probably looked something like the ballot in Table 2.

The authors quote a study that noted that "in the 33 precincts in Dayton in which voters saw this bal-

lot rotation [with "candidate removed" appearing between Bush and Kerry above and Peroutka and Badnarik below], an average of 2.6% of all voters overvoted. This compares to just 1.1% of voters, on average, in Dayton precincts that saw other rotations."[141] Appropriately, the authors discuss the overvoting problem that the "candidate removed" tag caused, particularly in some precincts with many voters of lower socio-economic status.[142]

The authors of *Better Ballots* do not note, however, the significance of the fact that this problem occurred in only 1/5 of the precincts. In many states, the problematic rotation would have been the exact rotation in use in 100% of the precincts: the two major candidates first, followed by the independent candidates in order of party vote share in previous elections.[143] Since Nader had been on the ballot in 2000, he likely would have been the third candidate under the ballot ordering laws in those states, thus

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[137]NORDEN ET AL., *supra* note 12, at 32.

[138]*Id.*

[139]*Id.*

[140]The ballot illustration indicates that Montgomery County used a punch-card ballot, which allows voters to "overvote" and thus spoil their ballots; if Montgomery County had used DRE machines or lever machines, it would have been physically impossible for voters to "overvote" the contest. Of course, some optical-scan ballots *do* allow overvotes, and their use could have led to a similar problems.

[141]NORDEN ET AL., *supra* note 12, at 33 (citing Jacobs, *supra* note 24, at 4). Presumably, the other ballot positions did not lead to a disproportionate number of overvotes because it was the only rotation that had at least two candidates on each side of the "candidate removed" position. When the "candidate removed" tag was in the top or the bottom position, all four of the other candidates were clumped together. Likewise, when the "candidate removed" tag was in the second or fourth position, the other names were in groups of one and three and three and one, respectively, thus interfering with the voter's automatic response to choose one from between two candidates.

[142]NORDEN ET AL., *supra* note 12, at 33 (noting that some precincts with low socio-economic levels had residual vote rates as high as 15.56%) (citing Jacobs, *supra* note 24, at 4).

[143]For example, in Maryland, ballot ordering is based on the popularity of the parties. MD. ELECTION LAW CODE ANN. § 9-210 (2011).

dictating the exact contest list that led to the high residual vote rate in 1/5 of the precincts in Montgomery County. Further, the authors highlight the overvoting caused in the precincts with voters of lower socio-economic status. At least some of the precincts that surrounded those high-overvoting precincts, however, were likely to have had similar demographic characteristics, yet because they had a less problematic ballot design, the voters in those precincts presumably cast fewer overvotes. The overall residual rate in the 4/5 of the precincts with less problematic contest lists was 1.1%,[144] less than half of the rate that occurred in the 1/5 of precincts with the problematic contest list; these precincts had an overall residual rate of 2.6%.[145] Interestingly, George W. Bush won Ohio by 2.1% of the vote.[146]

The authors are correct to point out the problems with "candidate removed" slots on the ballot, and to suggest solutions,[147] but they admit that completely preventing the problem is not always possible.[148] The final decision disqualifying Nader from the ballot, for example, was not handed down until October 25, "just one week before election day."[149]

The Nader case is an excellent illustration of the fail-safe benefits of rotation. If Ohio had used fixed-position ballots, and all of the counties had used ballots that allowed overvotes (e.g., certain optical scan or punchcard ballots), the legitimacy of Ohio's electoral votes might have been thrown into doubt.[150] Ohio did have rotation, however, and that rotation may well have prevented 1.5% of the voters from overvoting, operating as a fail-safe that mitigated the impact of the last-minute design problem.

Further, both the butterfly ballot and the Montgomery County ballot show the limits of instructions in the face of bad design. Norden et al. discuss the problems of accurate instructions combined with poor "visual cues";[151] in other words, some voters pay more attention to visual cues than to instructions. Both the butterfly and Montgomery County ballots caused problems because of the intuitive, human ways in which many voters reacted to visual cues: on the butterfly ballot, voters punched the second hole for what they perceived to be the second name; on the Montgomery County ballot, voters double-voted by voting for what they perceived to be a separate set of candidates. Thus, effective design is even more important than effective instructions. If the design is good, voters' intui-

tive reactions will be correct, and the instructions will be less significant; if the design is bad, it is foreseeable that a percentage of voters will ignore instructions and vote intuitively, in the same way that some people put together a television cabinet without consulting the instruction booklet. Rotation is a necessary fail-safe for both bad instructions and bad design.

Rotation can reduce the impact of position-influenced votes caused by primacy effect, and by both proximity-mistake votes and ballot-flaw-induced votes. Because a certain percentage of position-influenced votes foreseeably result from human interaction with voting systems, and because after-the-fact fixes are difficult, costly, and potentially unfair,[152] states should implement precinct-level rotation.

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[144]Indeed, the author of the original study focused on precincts that used two different ballots (called the A-2 and A-3 ballots) and noted that "the group of A-2 precincts and the group of A-3 precincts should contain similar cross sections of Dayton's population." Jacobs, *supra* note 24, at 3.

[145]NORDEN ET AL., *supra* note 12, at 32.

[146]*2004 General Election Results – Ohio*, U.S. ELECTION ATLAS (last accessed June 24, 2012), *available at* http://uselectionatlas.org/RESULTS/>.

[147]NORDEN ET AL., *supra* note 12, at 34.

[148]*Id.* at 32.

[149]*Id.* (citing Reid Forgrove, *Nader's Name Is on the Ballot, But You Can't Cast a Vote for Him,* CINCINNATI ENQUIRER (Oct. 20, 2004)).

[150]As noted above, Bush won Ohio by 2.1% of the vote. *2004 General Election Results—Ohio*, U.S. ELECTION ATLAS, *available at* <http://uselectionatlas.org/RESULTS/> (last accessed June 24, 2012). If all Ohio counties had used the same technology as Montgomery County, and if these counties had used fixed-position ballots with "candidate removed" as the middle of five names (a very plausible scenario), Ohio might well have had a much higher residual vote rate that could have been lain at the feet of bad ballot design. Fortunately, many Ohio counties used different voting technology; even more fortunately, Ohio's use of precinct-level rotation spread the impact of any bad designs.

[151]*See* NORDEN ET AL., *supra* note 12, at 28 (noting the problem of response options on both sides of a candidate name, and that on one ballot, "the ballot instructions direct voters to complete the arrows to the left of their choices, [but] there are few visual cues on the page," and that "many voters mistakenly marked the arrow to the right of a candidate's name instead of the arrows to the left").

[152]VOTING: WHAT IS, WHAT COULD BE 42 (Report of the CALTECH/MIT Voting Technology Project (July 2001)), *available at* <http://www.vote.caltech.edu/drupal/files/report/voting_what_is_what_could_be.pdf> (hereinafter CALTECH/MIT REPORT) (The report explains problems with "re-votes" by observing that, "if a single seat determined control of the legislature, then the revote would be not just about this seat, but about which party would govern the legislature.").

*D. The limited significance of opportunities
to correct errors*

As indicated above, much of the attention devoted to ballot design has been focused on preventing undervotes and overvotes. It is true that HAVA requires that direct-recording electronic (DRE) ballots provide opportunities for review and correction of vote selections.[153] This opportunity is an important one, but the opportunity to review does not eliminate the problems of position-influenced votes. In one observation of actual voters using a paper ballot system, "less than one-third of the voters compared the paper ballots with the screen in order to verify all their selections."[154] In their study, Herrnson et al. observed that of subjects who were specifically instructed to pay attention to the voter verification system, "many…did not spend the time needed to verify every candidate they selected, even on the relatively short ballot."[155] The authors also expressed concern that correcting errors "would add time to the voting process and require steps with which most voters are unfamiliar."[156] When their subjects were instructed to change votes, many failed to make the changes due to the extra work involved in doing so.[157]

This reality may be the result of three problems. First, American voters must cast a high number of votes in most contests; the sample election in the Herrnson et al. study, for example, required voters to cast approximately 21 votes, a smaller number than many voters cast in significant November elections. Certainly, with that many votes to review during the limited time in the voting booth, voters may miss some of their mistakes. Second, voters may be unfamiliar with the equipment on which they vote. As noted above, at most, voters cast ballots no more than twice per year, and due to privacy issues and lack of feedback on certain voting systems, they may never learn whether they are voting accurately. Voters who are uncertain about how to correct a voting error may be unwilling to spend the cognitive costs, time costs, or reputation costs needed to change votes.

This concept may be particularly true as to a third problem related to correcting voting errors. Studies of "fall off" and "roll off" reveal that many voters choose to vote only in contests near the top of the ticket, and pay less attention to voting when they reach later contests in the ballot.[158] Perhaps obviously, a percentage of voters who were not fully committed to their votes in certain contests may be unwilling to spend time, cognitive, and reputation costs to fix voting errors. These voters might be willing to correct a vote, say, for a presidential candidate, but might be unwilling to exert the effort for county coroner.

Sunstein and Thaler discuss the "status quo bias" and the "yeah, whatever" heuristic: "Many people will take whatever option requires the least effort, or the path of least resistance.…All of these forces imply that if, for a given choice, there is a default option—an option that will obtain if the chooser does nothing—then we can expect a large number of people to end up with that option, whether or not it is good for them."[159]

The "yeah, whatever" heuristic may be one facet of primacy effect, because voting for the first option takes the least effort. It becomes even more significant, however, when a voter makes a voting error. That wrong vote then becomes the default—"an option that will obtain if the chooser does nothing." In the case of a mistaken vote, the chooser has already done something, so the default is the option that will obtain if the chooser does nothing *more*. Then the status quo bias kicks in, so even if voters are given the chance to correct the mistake (which good choice architecture should allow), they will be less likely to do so. Thus, good choice architecture should not just allow choosers to correct their mistakes; it should be designed so that the number of mistakes is as low

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[153]42 U.S.C. § 15481 (requiring that certain voting systems must "provide the voter with the opportunity (in a private and independent manner) to change the ballot or correct any error before the ballot is cast and counted (including the opportunity to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error)"; *see also* NORDEN ET AL., *supra* note 12, at 16 (recommending on a "Ballot Design Checklist" that electronic ballots "[i]nstruct voters to review their selections and provide clear instructions on how to change a selection").

[154]HERRNSON ET AL., *supra* note 18, at 122 (discussing observation at a Nevada election in 2004) (citation omitted).

[155]*Id.* at 122.

[156]*Id.* at 127.

[157]*Id.* at 77 (finding that accuracy rates drop 5–12 percentage points when voters change a vote, noting that on various systems, some voters were "unwilling or unable" to make the change, or did not make the change "[i]n response to the extra work involved").

[158]*E.g.*, Augenblick and Nicholson, *supra* note 12, at 23 ("We find that voters are more likely to abstain and more likely to rely on decision shortcuts, such as voting for the status quo or the first candidate listed in a race, as the ballot position of a contest falls.").

[159]THALER AND SUNSTEIN, *supra* note 7, at 83.

as possible and that any mistakes are spread as evenly as possible among all the choices.

To sum up, the following consequences of candidate name ordering on ballots are reasonably foreseeable:

(1) In all elections, a small percentage of voters—perhaps as high as 6%—will be influenced by ballots as they interact with them, leading them to decide to cast primacy-effect votes in favor of the candidates listed first in each contest. If the ballot is a fixed-position ballot, the same candidate in each contest will receive all of the primacy-effect votes; if the ballot is rotated by precinct, the primacy-effect votes will be distributed fairly equally.

(2) In all elections, even those with well-designed ballots, a small percentage of voters—.25% to 2% or more—will cast proximity-mistake votes for a candidate they did not intend to support.[160] If the ballot is a fixed-position ballot, the same candidate(s)—those in the middle of the contest list—will be more likely to lose vote share to these proximity mistakes. If the ballot is rotated by precinct, the proximity-mistake votes will be distributed fairly equally.

(3) In some elections, previously undetected flaws in ballot design will lead a small percentage of voters—.5 to 1%[161] or more—to make a specific mistake or set of mistakes. If the ballot is a fixed-position ballot, the same candidate(s) will gain all of any miscast vote share, and the same candidate(s) will lose all of the miscast vote share. If the ballot is rotated by precinct, the ballot-flaw induced votes will be distributed fairly equally.

(4) In all elections, a percentage of voters who make proximity mistakes or ballot-flaw-induced mistakes will be unwilling or unable to accurately correct their mistakes, even if they are made aware of them.[162]

(5) Some contests in each election cycle will be decided by margins of 1% or less, meaning that the margin of victory will be smaller than the likely percentage of position-influenced votes. Thus, the same voter behaviors could lead to a different result in states with fixed-position ballots than they would in states where the ballots were rotated by precinct. Because rotation mitigates the impact of mistakes, ballots that are rotated by precinct are,

therefore, likely to reflect voter intent more accurately.

Accordingly, candidates (and, by extension, their supporters)[163] have an interest in being placed in a favored position on the ballot—a position that is less likely to lead to voter mistakes. More accurately, perhaps, these candidates have an interest in *not* being placed in a *disfavored* ballot position.

The problem of position-influenced votes is a real one and has certainly affected the outcome of some elections. The question is whether courts or legislatures are willing to fix the problem.

IV. MAKING ROTATION HAPPEN

Some might question why states should bother with rotation. To implement rotation effectively, election officials have to determine the rotation appropriate for each contest and to design programs

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[160]This prediction presumes a best-case scenario of a well-designed ballot. It does not take into account voting mistakes that result from flaws in ballot design.

[161]Research indicates that at least .74% of the Gore voters in Palm Beach County cast valid, mistaken votes for Pat Buchanan. This total does not include those voters who cast mistaken votes and then invalidated their votes when trying to correct their mistakes. *See* Steve Bousquet and Thomas C. Tobin, *Without Overvotes Gore Was Doomed: Thousands of Votes Were Rejected Because of Extra Marks Emphasizing the Voters' Real Choice*, St. Petersburg Times (Nov. 12, 2001), *available at* <http://www.sptimes.com/News/111201/Lostvotes/Without_overvotes_Gor.shtml> (noting that "5,352 Palm Beach County voters punched holes for both Gore and Pat Buchanan. Another 2,864 voters punched holes for both Gore and Socialist David McReynolds, whose name also was across from Gore's…[and] 1,676 Palm Beach County voters punched holes for both Bush and Buchanan."). Researchers who analyzed the 2000 presidential election in Palm Beach County concluded that at least 2,000 of the votes cast for Pat Buchanan in that county were mistaken votes that voters intended to cast for Al Gore. Wand et al., *supra* note 13, at 795. Gore received 268,945 votes in Palm Beach County, or 270,945, counting the 2,000 miscast votes. *See also* Richard L. Smith, *A Statistical Assessment of Buchanan's Vote in Palm Beach County*, 17 Statistical Sci. 441–57 (2002), *available at* <http://www.stat.unc.edu/postscript/rs/pap4.pdf> (concluding that at least 2,500 of Buchanan's votes were miscast votes by Gore supporters).

[162]Herrnson et al., *supra* note 18, at 77, 122, 127 (noting a 5–12% increase in error rates when voters change votes, and observing frequent unwillingness to review or correct votes).

[163]*E.g., Bullock v. Carter*, 405 U.S. 134, 143 (1972) ("[t]he rights of voters and the rights of candidates do not lend themselves to neat separation; laws that affect candidates always have at least some theoretical, correlative effect on voters").

and protocols that will rotate the candidate names accurately.[164] While this change in ballot preparation may take some effort, we know that rotation is feasible because it has been used in several states without significant incident.[165] Admittedly, rotation does add some cost to ballot preparation,[166] although the cost will vary depending on the voting technologies in use in a given state.[167]

The expenses of precinct-level rotation are worthwhile, however. The right to vote—and to vote accurately—is of vital importance. As stated earlier, the most fundamental principle of any democracy is that "the people should choose whom they please to govern them."[168] The United States Supreme Court has observed about the right to vote, "'[n]o right is more precious in a free country than that of having a voice in the election of those who make the laws under which, as good citizens, we must live. Other rights, even the most basic, are illusory if the right to vote is undermined.'"[169] And the Carter-Baker Commission noted in 2005 that "[c]itizens should be confident that the results of the election reflect their decision."[170]

The combination of position-influenced votes with fixed-position ballots imposes a needless burden on the right to vote because it increases the chances of an inaccurate or controversial electoral result. Even if we leave aside claims that up to 6% of the vote in a given contest may be affected

by primacy effect,[171] it is disturbing that a major study has shown that a 2–3% error rate is common across voting systems even for voters completing the simplest voting tasks, with a higher rate for voting tasks that are more complex.[172] As the authors of that study have observed, "even a 2–3 percent error rate is large enough to change the outcome of some elections (*assuming the errors are disproportionately in one direction*)."[173] By its nature, of course, a fixed-position ballot tends to direct errors disproportionately in one direction.

When a state places a candidate's name in the middle of a three-candidate list on a fixed-position ballot, that candidate knows that more of his or her supporters are likely to vote inaccurately than will the supporters of the candidates whose names the state placed in the first or last position.[174] If two to three percent of voters are likely to cast mistaken votes in any given contest, and if more voters are likely to cast mistaken votes when aiming for candidates who are not in the top or bottom position of a candidate list, then it stands to reason that the middle candidate will lose a disproportionate number of votes on that fixed-position ballot. If that candidate were running for office in a state with precinct-level rotation, in contrast, each of the three candidates in the contest would be in the disfavored middle position in one-third of the precincts, thus spreading the predictable

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[164]Presumably, of course, states implementing new precinct-level rotation statutes can seek guidance from the dozen or so states that already use some system of ballot rotation. *See* Miller, *supra* note 39, at 380 (noting that twelve states currently use "some form of rotation" in statewide general elections). Further, the Election Assistance Commission (EAC) has identified rotation as at least a "supported voting variation" as part of the "Voluntary Voting System Guidelines (VVSG) that set the standards against which voting systems are tested." U.S. Election Assistance Commission: Fiscal Year 2013 Budget Request (Feb. 13, 2012), *available at* <http://www.eac.gov/assets/1/Documents/FY%202013%20CBJ%20Feb%2010%202012–FINAL.pdf>); <http://www.eac.gov/testing_and_certification/voluntary_voting_system_guidelines.aspx>.

[165]*E.g.*, Miller, *supra* note 39, at 380 (noting that twelve states currently use "some form of rotation" in statewide general elections).

[166]*E.g.*, Alvarez et al., *supra* note 90, at 52 (noting costs in expense and possible voter confusion).

[167]*See id.* (indicating that electronic voting may decrease some costs associated with rotation).

[168]*U.S. Term Limits v. Thornton*, 514 U.S. at 783 (citing *Powell v. McCormack*, 395 U.S. at 547 (internal quotation

marks omitted)) (holding that states could not ban members of Congress from appearing on the ballot after certain number of terms, even if it allowed them to be elected via write-in votes).

[169]*Williams v. Rhodes*, 393 U.S. 23, 31 (1968).

[170]CARTER-BAKER REPORT, *supra* note 36, at 6.

[171]*E.g.*, Krosnick et al., *supra* note 22, at 66 (results of a study of the 2000 elections in Ohio and North Dakota showing primacy effects in two-candidate contests that ranged from 1.41% to 6.32%, with an average of 2.88%).

[172]HERRNSON ET AL., *supra* note 18, at 73, 89 (studies of more than 1500 voters found that "[w]hen voters used an office-bloc ballot with no special tasks, they cast accurate ballots more than 97 percent of the time....Where more than one candidate was to be elected to a given office, or where voters changed a vote, many more errors were committed.").

[173]*Id.* at 73 (emphasis added).

[174]*Id.* at 195, n. 16 (noting that voters who planned to vote for either the first or last candidate on a list committed fewer proximity errors than those who intended to vote for candidates other than the first or last candidate—i.e., those in the middle of the list).

proximity mistakes more equally among all three candidates.

The two-to-three percent error rate would perhaps be less troubling, even in states with fixed-position ballots, if slim margins of victory were more rare. Alas, however, that is not the case; it is easy to find elections that have been won by less than three percent of the vote. In 2001, the authors of a CalTech/MIT study observed that "[c]lose elections, problematic votes, and recounts occur in every election year and in every jurisdiction."[175] Since most states that have recount statutes require a margin of 1% or less,[176] the fact that recounts are common indicates that slim margins of victory are common. A search for narrow margins of victory in the 2010 general election quickly yields articles in newspapers discussing many such elections,[177] including gubernatorial contests in Ohio (2%)[178] and Minnesota (less than .5%), respectively.[179]

Further, because position-influenced voting is largely invisible, voters are unlikely to call for reform unless and until they experience an election with catastrophic problems that could have been avoided by rotated ballots—and waiting for catastrophe is generally not the best way to determine public policy.[180] Even in catastrophe, an election that goes bad can rarely be set right. The "ounce of prevention" that ballot rotation provides is important because flawed election processes are nearly impossible to fix after the fact. As the Supreme Court observed in *Burson v. Freeman*, "the remedy for a tainted election is an imperfect one."[181] The authors of the CalTech/MIT study have noted that "[r]evotes are a bad way of settling contested elections because the election is no longer the same."[182]

States should use well-designed ballots and voter education programs to prevent predictable voter mistakes. Because they can never prevent all voter mistakes, however, they should do what they reasonably can to prevent the impact of those mistakes. It is one thing to shrug off the problem of voters who make a voting decision that was influenced by the order of

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[175]CALTECH/MIT REPORT, *supra* note 152, at 6.

[176]*See, e.g.,* Rob Richie and Emily Hellman, *A Survey and Analysis of Statewide Election Recounts, 2000–2009* at p. 7 (Apr. 2011), *available at* <http://www.fairvote.org/assets/Uploads/Recounts2011Final.pdf> ("Ten states automatically conduct a recount within a margin of 0.5 percent between the top two candidates, four states automatically have a recount if the margin is 1 percent or less, three do so at margins of 0.1% up to 0.25 percent, and one (Michigan) conducts automatic recounts for margins equal to or below 2,000 votes. Three additional states do not have automatic recount laws although allow recounts in the case of an exact tie"); *see generally* the *State Recount Laws Searchable Database* created by the Minnesota Center for Electoral Integrity, *available at* <http://ceimn.org/ceimn-state-recount-laws-searchable-database>.

[177]*E.g.*, Charley Shaw, *District 15B Recount: Minnesota DFLer Concedes in Election Decided by 10 Votes*, LEGAL LEDGER (St. Paul, MN, Nov. 29, 2010) (describing three state house contests that resulted in recounts); *After Recount, Bowman Wins Senate Seat by 71 Votes*, TELEGRAPH HERALD (Dubuque, IA, Nov. 25, 2010) (describing Iowa state senate contest with margin of victory of less than 1%); *Pivotal Recount Looms in Texas House District 48*, TEXAS INDEPENDENT (Nov. 24, 2010) (discussing recount plans in contest where original margin of victory was 16 votes).

[178]<http://www.sos.state.oh.us/SOS/elections/electResultsMain/2010results/20101102governor.aspx> (Amended official results showing winner with 49.04% of the vote and second place finisher with 47.04% of the vote).

[179]The website of the Minnesota Secretary of State reported that the winning candidate received 43.63% of the vote, and the next most popular candidate received 43.21% of the vote. <http://electionresults.sos.state.mn.us/20101102/ElecRslts.asp?M=S&Races=0331>.

[180]*See generally* Gerken, *supra* note 41, at 1585. Gerken notes that election problems in general are "largely invisible" to voters and that when those problems become visible, the focus of both the public and election officials tends to stay on the problems that have been revealed. The Carter-Baker study, for example, devoted a chapter to voting technology without any significant discussion of the problem of voter error; instead, the report was focused on the problem of whether officials were able to use technology to accurately count the votes that were cast. CARTER-BAKER REPORT, *supra* note 36, at 6 (noting that one of the five "pillars" of electoral reform was "[v]oting machines that tabulate voter preferences accurately and transparently, minimize under- and over-votes, and allow for verifiability and full recounts").

[181]*Burson v. Freeman*, 504 U.S. at 208. In a footnote, the court distinguished the burdens of rerunning a trial from those of rerunning an election, noting, however, that "even in the fair trial context, we reaffirmed that, given the importance of the countervailing right, 'our system of law has always endeavored to prevent even the *probability* of unfairness.'" *Id.* at 209, fn. 12, (citing *Sheppard* v. *Maxwell*, 384 U.S. 333, 352 (1966)) (*Burson* court's emphasis); *see also* Richard L. Hasen, *Beyond the Margin of Litigation: Reforming U.S. Election Administration to Avoid Electoral Meltdown*, 62 WASH. & LEE L. REV. 937, 945–46 (2005) ("The costs of post-election review are large: The pressure put on courts to decide arcane election law questions when the outcome of an election is on the line—especially a presidential election—is huge, and the appearance of partisan decision-making is inevitable.").

[182]CALTECH/MIT REPORT, *supra* note 152, at 42 (continuing by explaining that, "[f]or example, if a single seat determined control of the legislature, then the revote would be not just about this seat, but about which party would govern the legislature").

names on the ballot.[183] It is quite another to shrug off the problem of ballot positions and ballot designs that lead voters to miscast votes: these ballots are inhibiting people from "choosing whom they please" to govern them. Likewise, when states refuse to use available systems to mitigate the electoral impact of foreseeable voter behaviors, they are interfering with the freedom of voters to elect the candidates of their choice.

Certainly, not every election is decided by position-influenced votes. But rotated ballots are a remedy that can be imposed only before the election. The limits on post-election fixes are appropriate, but they increase the obligation of election officials to do all they can before the election to mitigate the impact of foreseeable and predictable voter behavior. Ballot rotation represents a last-best-chance to avoid the electoral impact of foreseeable and unforeseeable voter error and ballot design issues.

Individual candidates and their supporters have brought a variety of lawsuits to challenge fixed-

position ballot ordering statutes. Although lawsuits will probably continue, litigation may not be the best means for achieving precinct-level ballot rotation.[184] Recent research, however, may encourage legislatures to enact ballot rotation as a way to fairly distribute the votes miscast due to predictable proximity mistakes and to avoid the election catastrophes that can be caused by sometimes-unavoidable ballot-design problems.

A. Litigation

Candidates have challenged fixed-position ballots on constitutional grounds for decades,[185] and they will probably continue to do so. Usually arguing that these ballots violate the first and fourteenth amendment rights of candidates or of their supporters by diluting votes or denying equal protection (or both),[186] these plaintiffs have found inconsistent success as courts debate the appropriate legal standard and the sufficiency of evidence.[187]

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[183] *Sonneman v. State*, 969 P.2d at 641 (upholding a fixed-position ballot statute and noting that "[r]egardless of where a candidate's name appears on the ballot, the people use free will in voting and the winner is elected based on their will only").

[184] Professor Heather Gerken has observed that law professors and social scientists are full of ideas for how to reform elections, but that too few of them have analyzed the "here to there" problem: How to get from the idea for election reform (i.e., "here") to the implementation of the idea for election reform ("there"). GERKEN, *supra* note 32, at 6–7. This article will make a brief effort to do so, although I agree with Professor Gerken that identifying needed reforms is much easier than identifying a viable way to ensure that the reform actually takes place.

[185] *E.g., Culliton v. Board of Election Comm'rs*, 419 F. Supp. 126, 129 (N.D. Ill. 1976) (holding that Republican-first provision violated equal protection clause), *aff'd and remanded sub nom. on other grounds by*, *Sangmeister v. Woodard*, 565 F.2d 460, 464 (7th Cir. 1977); *Gould v. Grubb*, 536 P.2d 1337, 1345–46 (Cal. 1975) (holding that incumbent-first and alphabetical listing violated equal protection principles); *Elliott v. Secretary of State*, 294 N.W. 171, 173 (Mich. 1940) (ordering the rotation of names on a non-partisan ballot for Supreme Court Justice and observing that "[i]t is a commonly known and accepted fact that in an election, either primary or general, where a number of candidates or nominees for the same office are before the electorate, those whose names appear at the head of the list have a distinct advantage" (citing *Groesbeck v. Board of State Canvassers*, 232 N.W. 387 (Mich. 1930)).

[186] *E.g., Gould v. Grubb*, 536 P.2d at 1338, 1343 (finding unconstitutional a ballot ordering system that placed incumbents in the top position, noting vote dilution and equal protection concerns).

[187] *E.g., Green Party of Tennessee v. Hargett*, 700 F.3d 816, 827 (6th Cir. 2012) (reversing and remanding case in which

district court found that a fixed-position ballot violated the First Amendment when it listed candidates based on party popularity, noting that the plaintiffs had presented no studies showing bias in that state's ballots, and so the district court had "no basis" on which to hold that the statute was unconstitutional "on its face"); *Akins v. Secretary of State*, 904 A.2d 702, 706 (N.H. 2006) (invalidating New Hampshire ballot ordering statute based on an "equal right [for qualified inhabitants of the state] to be elected into office") (citing N.H. CONST. PT. I, ART. 11); *Schaefer v. Lamone*, 2006 U.S. Dist. Lexis 96855 at *14 (D. Md. Nov. 30, 2006) *aff'd*, 248 Fed. App'x. 484 (4th Cir. 2007) (finding no equal protection violation in statute that requires alphabetical ordering of candidates); *Koppell v. New York State Bd. of Elections*, 108 F. Supp. 2d at 360 (finding constitutional a primary ballot system that mandates a lottery in the 57 counties outside of New York City and rotation within the city)*; Sonneman v. State*, 969 P.2d at 640–41 (upholding a fixed-position ballot statute under first and fourteenth amendments); *Gould v. Grubb*, 536 P.2d at 1338, 1347 (invalidating an incumbents-first ballot order based on federal constitutional principles); Interestingly, most if not all plaintiffs, perhaps unaware of the impact of proximity mistake votes and ballot-flaw-induced votes, have focused solely on primacy-effect votes. Further, some of these plaintiffs have not sought a court order mandating rotation, which would spread evenly the benefits and burdens of the various locations in the ballot order. Instead, these plaintiffs have often sought merely to increase the chances that *their* candidate will receive the benefit of the first position. *E.g.*, *Green Party of Tennessee v. Hargett*, 2012 WL 379774 at *52 (M.D. Tenn. Feb. 3, 2012) (court agreed with plaintiffs' proposed remedy of "placement of candidates [in order] based upon public drawing of lots or other random method"), *rev'd and remanded*, 700 F.3d at 827.

A complete discussion of appropriate litigation strategies is beyond the scope of this article. Plaintiffs might be more likely to succeed, however, if they broaden the basis of their claims from concerns about primacy-effect votes alone (which, as noted, are usually votes that are cast accurately and counted accurately). Plaintiffs might use recent research to argue that fixed-position ballots create a constitutional violation because of proximity-mistake votes.

Courts analyzing electoral administration cases typically use a test that has been developed over several decades. The test considers how the alleged "burden" put on voters by the administrative requirement is related to voter qualifications and whether it is an "evenhanded restriction" that protects the integrity and reliability of the voting process.[188] Burdens that are characterized as "severe" have typically been subject to strict scrutiny.[189] Whatever the level of the burden, it is then balanced against the interests that the state has put forward to justify the burden.[190] As the Supreme Court observed in *Crawford v. Marion County Election Board*, "[h]owever slight that burden may appear…it must be justified by relevant and legitimate state interests 'sufficiently weighty to justify the limitation."[191] Unfortunately, as some have noted, this test leaves wide room for interpretation.[192]

Although plaintiffs have argued that a fixed-position ballot statute creates a severe burden when its results can change the outcomes of some elections, courts have not always been sympathetic to that argument.[193]

Yet, when determining the appropriate level of scrutiny, courts have considered not only the magnitude of the burden on individual voters, but also whether the burden is discriminatory. For example, they have justified holdings in favor of a state's electoral administration decisions by noting that the state's decisions were "neutral"[194] or "non-discriminatory."[195] Opponents of fixed-position ballots might be able to argue that fixed-position ballots are not "neutral" because state legislatures are aware of the supposed benefits of the first position,[196] and they are specifically designing the ballot to grant that benefit to an incumbent or to one or both of the two major parties.

More significantly, plaintiffs may be able to use current research to argue that fixed-position ballots are not non-discriminatory because they discriminate against supporters of candidates in the disfavored positions on the ballot and dilute the votes for those candidates. When state laws operate to assign those disfavored positions to a particular candidate—any particular candidate—that candidate is more likely to lose votes due to that state-assigned ballot position. The ballot therefore discriminates against that candidate and, more importantly for first amendment and equal protection purposes, against the supporters of that candidate.

In other words, this type of fixed-position ballot, when coupled with the realities of how human beings vote, could be considered unconstitutional because it constitutes "arbitrary and disparate

[188]*Crawford v. Marion County Election Bd.*, 553 U.S. at 189–90 (citing *Harper v. Virginia Bd. of Elections*, 383 U. S. 663 (1966) and *Anderson* v. *Celebrezze*, 460 U. S. 780 (1983)).
[189]*Crawford v. Marion County Election Bd.*, 553 U.S. at 190.
[190]*Id.*
[191]*Id.* (citing *Norman v. Reed*, 502 U. S. 279, 288–289 (1992)).
[192]*E.g.*, Daniel P. Tokaji and Allison R. Hayward, *The Role of Judges in Election Law*, 159 U. PA. L. REV. PENNUMBRA 273, 278 (2011) (Tokaji states that the "obvious problem with this generic standard is that it provides little guidance in resolving hard cases, particularly ones where the evidence is scant or conflicting.").
[193]*E.g.*, *Sonneman v. State*, 969 P.2d at 638, 639 n. 7 (finding that fixed-position ballot "allocates the benefit of positional bias" through its random selection of one candidate for the top position, and that this so-called "allocation" of primacy effect votes places a "lesser burden" on the right to vote, even though it accepted as true allegation that primacy effect affects 5–7% of votes cast, and that elections in Alaska are "often decided by margins less than 5%").
[194]*Weber v. Shelley*, 347 F.3d 1101, 1107 (9th Cir. 2003) (finding that use of DRE machines that lacked a voter-verified paper trail did not violate equal protection or due process, even

though these machines did not allow certain methods of ballot recounts, and concluding that "[s]o long as their choice is reasonable and neutral, it is free from judicial second-guessing").
[195]*E.g.*, *Morrison v. Colley*, 467 F.3d 503, 507(6th Cir. 2006) (finding that requiring independent candidates to claim that they were not affiliated with a political party did not violate their constitutional rights, and that "[l]esser burdens…trigger less exacting review, and a State's "'regulatory interests'" will usually be enough to justify "'reasonable, nondiscriminatory restrictions'" (citing *Burdick v. Takushi,* 504 U.S. 428, 434 (1992); *Anderson v. Celebrezze*, 460 U.S. at 788; *Norman v. Reed*, 502 U.S. at 288–89 (requiring "corresponding interest sufficiently weighty to justify the limitation")).
[196]*E.g.*, *Green Party of Tennessee v. Hargett*, 2012 WL 913259 at *7 (M.D. Tenn. Mar. 16, 2012) (refusing to stay court order requiring drawing of lots to determine ballot order (after court had invalidated statute that gave preferential ballot placement to the "majority party") and observing that "the mere fact of [the statute's] enactment reasonably reflects the [majority] party's view or perception that preferential placement on the ballot has political and election value."); *original decision rev'd and remanded,* 700 F.3d at 827 (noting lack of evidence of bias in Tennessee's ballots).

treatment" that "value[s] one person's vote over that of another."[197] As the Supreme Court observed in *Bush v. Gore*, "[i]t must be remembered that 'the right of suffrage can be denied by a debasement or dilution of the weight of a citizen's vote just as effectively as by wholly prohibiting the free exercise of the franchise.'"[198] Accordingly, when states, by the operation of law, place candidates in ballot positions where they will predictably lose more votes to foreseeable human error, they dilute the votes of the supporters of those candidates and violate their first amendment rights.

Courts have varied in their responses to concerns about voter error in other contexts. Some courts have found potential constitutional violations when some voters must use voting technology that leads to more mistakes, observing that a state may not "value one person's vote over that of another,"

even if the state "does not know the faces of those people whose votes get valued less."[199] Other courts, however, have dismissed concerns about voter error as "de minimis," and have found that democratically elected legislatures may decide to accept the burden of voter error on the election process.[200]

Further, even if plaintiffs could convince a court that fixed-position ballots are unconstitutional, rotation may not result. Courts cannot draft legislation; the most they can do is to declare existing legislation unconstitutional. Indeed, when the Seventh Circuit declared fixed-position ballots in Illinois to be unconstitutional, the state legislature responded by drafting another fixed-position ballot statute that divided major and minor parties into two tiers, even though the court ruling had ordered the state to devise a "neutral" system that took minor parties into account.[201]

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[197]*See Bush v. Gore*, 531 U.S. 98, 104–05 (2000) ("Equal protection applies…to the manner of [the] exercise [of the right to vote]. Having once granted the right to vote on equal terms, the State may not, by later arbitrary and disparate treatment, value one person's vote over that of another.") (citing *Harper v. Virginia Bd. of Elections,* 383 U.S. at 665).

[198]*Bush v. Gore*, 531 U.S. at 105 (citing *Reynolds v. Sims,* 377 U.S. 533, 555 (1964)).

[199]*Black v. McGuffage*, 209 F. Supp. 2d 889, 899 (N.D. Ill. 2002) (denying motion to dismiss Voting Rights Act and equal protection claims challenging use of voting systems with lower accuracy rates in some Illinois counties and reasoning that when the state allows the use of "voting systems with greatly varying accuracy rates" in different counties in the state, it "'value[s] one person's vote over that of another'…even if it does not know the faces of those people whose votes get valued less. This system does not afford the 'equal dignity owed to each voter.'" (citing *Bush v. Gore*, 531 U.S. at 104–05). *See also Stewart v. Blackwell*, 444 F.3d 843, 858 (6th Cir. 2006) (reversing decision denying relief to plaintiffs who claimed equal protection and voting rights violations based on use of voting technology with high error rates in some counties, and observing that "[v]ote dilution, of course, while just as effective as an outright denial of the franchise, may be accomplished in many ways, both intentionally and unintentionally, in a manner that does not immediately shock the senses as would an outright denial. This is not a reason, however, to be any less cognizant of the Equal Protection Clause implications."). This decision was subsequently superseded and the trial court's decision vacated due to the state's agreement to abandon challenged voting technology. *Stewart v. Blackwell*, 473 F.3d 692, 692 (6th Cir. 2007).

[200]*Weber v. Shelley*, 347 F.3d at 1107. In *Weber*, the court concluded that the use of DRE machines that lacked a voter-verified paper trail did not violate equal protection or due process, even though these machines did not allow certain methods of ballot recounts, because "democratically-elected state officials" must "weigh the pros and cons" of various systems, and "[s]o long as their choice is reasonable and neutral, it is free from judicial second-guessing." The court went on to explain, "California made a reasonable, politically neutral and non-discriminatory choice to

certify touchscreen systems as an alternative to paper ballots.…Nothing in the Constitution forbids this choice." *See also Southwest Voter Registration Educ. Project v. Shelley*, 344 F.3d at 919–20 (en banc decision refusing to enjoin election until punchcard systems could be replaced, finding that it was "merely a speculative possibility" that the expected denial of the right to vote caused by the punchcard ballots would "influence the results of the election").

[201]*Sangmeister v. Woodard*, 565 F.2d at 466–68. The *Sangmeister* court found a fourteenth amendment violation when county clerks placed candidates of their own party in the top ballot position. The court reversed the part of the district court opinion that required ballot rotation, issuing instead an order that required that the ballot ordering method be "neutral" and take major and minor parties into account. *Id.* Two years later, however, the Seventh Circuit held that a two-tiered fixed-position ballot system was constitutional, even though the system essentially guaranteed the top two spots on the ballot to the two major political parties. *Bd. of Election Com'rs v. Libertarian Party*, 591 F.2d 22, 27 (7th Cir. 1979). In a dissent, Judge Swygert argued that the procedure invidiously discriminated against minor parties, noting that "[b]y approving a procedure which prevents a minor or 'non-established' party [a]s such from ever attaining the top ballot position, the majority has effectively negated the order of this court in *Sangmeister*." *Id.* at 28 (Swygert, J., dissenting). In contrast, in February of 2012, the Middle District of Tennessee specifically found unconstitutional a popularity-based system of ordering the ballot. *Green Party of Tennessee v. Hargett*, 700 F.3d at 829. The statute at issue in *Hargett* required the "majority" party to be listed first, followed by other parties, in order of popularity. The court's holding, however, specifically refused to mandate rotation, agreeing with the plaintiffs that drawing lots could be appropriate. *Id.* The court's order was reversed and the case remanded by the Sixth Circuit in November of that same year. 700 F.3d at 818. The Sixth Circuit observed that the plaintiffs' facial challenge to the statute required that they meet a high evidentiary burden, and noted that plaintiffs had not submitted evidence of studies specifically involving Tennessee's ballots. *Id.* at 821.

Accordingly, those who wish for ballot rotation legislation might do well to cut out the middle-man/court and take their concerns directly to the legislature.

B. Legislation

There are at least three ways that rotation-mandating constitutional provisions or legislation could come about. First, Congress could enact legislation to mandate or encourage rotation; second, concerned citizens or public interest groups could use the initiative process to enact constitutional provisions or statutes; and third, state legislatures could do so on their own. Perhaps surprisingly, the third option may be the most likely, but only if legislatures understand that primacy-effect votes are not the only position-influenced votes that can swing an election.

Theoretically, Congress could mandate or encourage ballot rotation, either by exercising its authority over congressional elections under the Elections Clause or by providing financial incentives through its Spending Clause power, but neither is likely to occur. HAVA, for example, was enacted after major problems with the use of punchcard ballots were exposed, but it did not contain a voting technology mandate. Instead, HAVA made funding available to states that wished to update punchcard voting systems; to the extent HAVA laid out voting technology guidelines, Congress specifically left execution of those guidelines to the states.[202] And since HAVA, Congress has shown little willingness to intervene in state and local election administration. Thus, it is

likely that states will retain the power to decide whether to use rotated or fixed-position ballots.

Concerned citizens or public interest groups are also unlikely to press for ballot rotation through the initiative process. At this time in history, with so many voting issues on the public stage,[203] rotation concerns are understandably ignored. The Carter-Baker Commission was all but silent as to ballot rotation, and other reform groups may not have the issue on their radar, focusing instead on more direct and more visible threats to the franchise.[204] The impact of position-influenced votes—like that of many problems that result from weak election infrastructure[205]—is usually invisible. Although fixed-position ballots tend to direct position-influenced votes to the same set of candidates, that surplus may be no more than .25–5% of the vote in most elections.[206] If the margin of victory is a large one, that surplus is irrelevant and unnoticed. Ballot-flaw-induced votes may be noticed in a close election, but only if, as in Palm Beach County in 2000, those votes contradict reliable predictors.[207] Further, even in an electoral catastrophe, primacy-effect votes and proximity-mistake votes would remain invisible; their causes are subtle, they are often unrecognized by those affected, and they occur even on ballots that are well-designed and that allow voters to review and change their votes.

Accordingly, it is likely that the problem of position-influenced votes will never be the focus of national or even statewide attention, even if and when those votes change the outcomes of elections. Therefore, we cannot expect the public to demand a change to fixed-

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[202] See 42 U.S.C. § 15302 ("A state shall use the funds provided under a payment under this section…to replace punch card voting systems or lever voting systems…with a voting system…that…does not use punch cards or levers. . . ."); see also 42 U.S.C. § 15485 ("The specific choices on the methods of complying with the requirements of this subchapter shall be left to the discretion of the State.") (referring to Subchapter III, regarding uniform and nondiscriminatory election technology and administration requirements).

[203] E.g., Ethan Bronner, Legal Battles Erupt Over Tough Voter ID Laws, N.Y. TIMES, July 19, 2012, available at <http://www.nytimes.com/2012/07/20/us/politics/tougher-voter-id-laws-set-off-court-battles.html?ref=us> (discussing legal battles over statutes requiring photo identification at the polls).

[204] Indeed, in a recent book that argues that we should create a ranking system for election systems as a way to use public pressure to spur reform, rotation is not mentioned. GERKEN, supra note 32. The book advocates a performance goal that "every ballot cast is counted properly." Id. at 30. This goal

is a laudable one, but achieving it does nothing for the voters whose votes are cast inaccurately due to ballot design flaws or due to their support for a candidate placed by operation of law in a disfavored position on the ballot. The 2,000-plus "extra" butterfly ballot votes for Pat Buchanan in the 2000 presidential election in Palm Beach County were counted properly; the problem was that the ballot design led them to be cast improperly.

[205] See GERKEN, supra note 32, at 23 (noting the problem of local control of elections is exacerbated because "the costs of deferred maintenance [of election infrastructure] are mostly invisible to voters. When a problem is invisible, local competition gives politicians every reason to neglect it").

[206] See supra, text accompanying notes 21–24.

[207] Wand et al., supra note 13, at 803 (analyzing the aberrant vote for Pat Buchanan in the Bush v. Gore election in light of previous voter behavior in Palm Beach County, with a particular focus on how few voters in the county had voted for Buchanan in a previous election).

position ballots.[208] It does not seem likely that any individual or that reform group will be sufficiently motivated to go through the considerable time and expense of putting ballot rotation on the ballot.[209]

Thus, with courts hesitant about the unconstitutionality of fixed-position ballots, and election reformers looking elsewhere, it is up to state legislators to enact precinct-level rotation on their own. Herrnson et al. have observed that election officials who are "concerned with fairness" should rotate candidate names in order to "distribut[e] the odds of losing votes to [proximity] mistake equally across candidates."[210] Indeed, state legislators have two noble reasons to enact rotation legislation, and at least one selfish reason.

The first noble reason is that rotation legislation is good policy due to everyday fairness concerns. Rotation distributes fairly the benefits of perceived and actual primacy-effect votes, as well as—as Herrnson et al. indicate—other position-influenced votes. As discussed earlier, current ballot ordering laws show that politicians believe that primacy effect exists,[211] and political and psychological researchers have argued for decades that primacy effect skews some election results.[212] Precinct-level rotation can promote electoral integrity by mitigating or eliminating the impact—if any—of primacy-effect votes, and the impacts of less-studied proximity-mistake votes and ballot-flaw-induced votes.

Those who argue that rotation is not good policy often advance one of three justifications: (1) that rotation increases the expense of elections;[213] (2) that rotation will cause "voter confusion";[214] or (3) that rotation will inhibit the effective use of uniform sample ballots.[215] None of these factors imposes enough of a cost to forego the benefits of ballot rotation.

Although courts have often been willing to accept monetary concerns as a justification for fixed-position ballot statutes,[216] there are few indications that these concerns should force states to reject rotation. In a 1998 case that specifically addressed the costs of ballot rotation, the State of Alaska argued, in essence, that fixed-position ballots advanced an interest in saving money, to the tune of $64,024 per election cycle.[217] While the plaintiff argued that this amount constituted "a negligible and insignificant .00005% of the State's $5,000,000,000 budget during that time," the court noted that "the more relevant comparison lies with the ballot budget, which was $469,026.75 for the 1994 year. The cost savings from eliminating rotational ballots would thus be approximately 13.7% of the ballot budget."[218]

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[208]*E.g.*, GERKEN, *supra* note 32, at 25–26 ("Partisanship and localism combine to create a system that is deeply flawed and resistant to change. When politics work badly, partisanship taints the way elections are administered and makes the foxes reluctant to give up guarding the henhouse. When politics work well, states and localities compete to fund projects that voters can see, and neglect problems that voters can't. In both cases, our election system suffers. The perils of partisanship and the problems of localism explain why a cause as appealing as election reform has yet to take root.").

[209]Ohio voters passed a ballot rotation constitutional amendment that was apparently put forward as a defensive ploy by Republican loyalists. *See* Roberts II, *supra* note 42, at 1–2 (noting that the Republican party and supporters of Robert Taft financed the campaign to support a ballot initiative that would change Ohio ballots from a party column form that allowed straight ticket voting to an office block form, as a result of a fear that straight-ticket Democratic voters re-electing a popular governor would cost Taft his senate seat).

[210]HERRNSON ET AL., *supra* note 18, at 71 (referring to the issue of unequally distributed proximity errors).

[211]*E.g.*, *Weisberg v. Powell*, 417 F.2d at 393 (discussing behavior of candidates and their representatives who camped out overnight for a chance to be first on the ballot).

[212]*E.g.*, BAIN AND HECOCK *supra* note 87, at 85 (asserting in 1957 that they found "statistically significant evidence of posi-

tion effect in primary and non-partisan elections in several Michigan cities….").

[213]*E.g.*, *Graves v. McElderry*, 946 F. Supp. 1569, 1574 (W.D. Okla. 1996) (finding that a Democrats-first ballot violated the equal protection clause, but observing that "[i]t is unrefuted in the Court record that the implementation of any kind of rotating ballot system in Oklahoma General Elections…would be both costly and burdensome for the State to implement and administer.").

[214]*E.g., id.* (finding that a Democrats-first ballot violated the equal protection clause, but observing that "[i]t is unrefuted in the Court record that the implementation of any kind of rotating ballot system in Oklahoma General Elections…would result in a ballot format that is potentially confusing to voters.").

[215]*E.g.*, *Sonneman v. State*, 969 P.2d at 640 ("Reducing voter confusion is also an important objective. Since the actual ballots will be identical to the sample ballots, the amendment may help prevent such confusion.").

[216]*E.g.*, *Graves v. McElderry*, 946 F. Supp. at 1574 (noting that "any kind of rotating ballot system" would be "costly"); *Sonneman v. State*, 969 P.2d at 639 (discussing cost issues as appropriate justification for change from rotated to fixed-position ballots). *See also* Miller, *supra* note 39, at 403 (citations omitted).

[217]*Sonneman v. State*, 969 P.2d at 639.

[218]*Id.*

The *Sonneman* court noted the costs of "printing the ballots,"[219] but this language may have been inadvertent, since both rotated and non-rotated ballots must be printed. It would make sense that the main extra cost would occur in the planning and design of the ballot, and determining how to accomplish the various rotation cycles needed for the multiple contests and multiple precincts at issue. There might also be extra costs in setting up ballot counting systems.[220] Depending on the systems used, however, certain computer programs might be able to be reused, or could be easily adapted, thus saving costs in the long run.[221] Further, the fact that several states currently use rotated ballots is a strong indicator that rotation is not prohibitively expensive.[222] Regardless of expense, states should balance the financial costs of rotation against the cost in voter confidence that they pay after an electoral meltdown.[223]

Some states that have defeated arguments in favor of rotated ballots have claimed that the state has a compelling interest in "avoiding voter confusion,"[224] a claim that too many plaintiffs and courts take at face value, as if believing that the voter will see a ballot rotating in the voting booth itself. There is little evidence that voter confusion is a valid concern in the rotation context. Voter confusion has not, apparently,

been a significant issue in the states that use rotation, although candidates have sometimes contested election results based on a state's failure to follow proper rotation procedures.[225] Alvarez et al. reference the unusually large California recall election and claim that rotation would inhibit effective campaigning, lamenting that under California's rotation system, "a candidate in the 135-person race to replace Governor Gray Davis on the 2003 California gubernatorial recall ballot could not campaign with a simple slogan, 'Vote for Smith, Number 118 on your ballot.'"[226]

Despite the limits on this type of "vote for number 118" campaign, there are no indications that voter confusion played a large role in the California recall. Elizabeth Garrett analyzed the impact of voter confusion in that election, noting both the use of rotation and the large candidate pool as two of several features that could cause confusion.[227] Garrett discusses some of the problems with the voting in that election, but observes that none of them were "substantial enough to affect the outcome," and she concludes that "the recall experience suggests that most voters are able to cope with some complexity in ballots."[228]

Indeed, Garrett argues that too many accept at face value the "voter confusion" claim (usually used to argue against broad ballot access), noting

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[219]*Id.* at 639.

[220]Miller, *supra* note 39, at 403 (noting that when fixed-position ballots are used, "vote-counting machines do not need to be programmed with the ballot format from each electoral district").

[221]*See also* Alvarez et al., *supra* note 90, at 52 (indicating that electronic voting may decrease some costs associated with rotation).

[222]*See also* Miller, *supra* note 39, at 403 (observing that the cost of rotation is "more than…de minimis" but that it "seems a rather minor cost when compared with the nature of the harm involved," and that "a number of states and local governments currently employ rotation schemes without seriously crippling their election budgets").

[223]Harold M. Ickes, Bobby R. Burchfield, Trevor Potter, William P. Marshall, Edward B. Foley, Samuel Issacharoff, Richard H. Pildes, and Richard L. Hasen, *Roundtable: How the Rules Shaped the 2004 Election. A Discussion Held On November 15, 2004, at the Library of Congress ad Moderated by Spencer A. Overton (A Symposium on the Law Governing Our Democratic Process)* 73 GEO. WASH. L. REV. 1274, 1293 (2005) (from remarks of Rick Hasen: "[T]he main short-term and I fear longer-term cost of this potential for electoral meltdown is we've seen a marked decline in public trust in the electoral process."); *see also* Hasen, *supra* note 181, at 972 (Hasen discusses a voter registration and identification plan and observes that "[o]n the cost point, good election administration is expensive.…The costs should not be compared to the cost of doing nothing, but to the expected value of the reduction in the chances of post-litigation meltdown created by enacting this pro-

posal. Meltdown threatens the very fabric of our democracy, and the nation should be prepared to pay significant sums to avoid it.").

[224]*E.g.*, *Schaefer v. Lamone*, 2006 U.S. Dist. Lexis 96855 at *7, *8, *13 (finding no equal protection violation in statute that requires alphabetical ordering of candidates and finding that preventing voter confusion was a compelling interest); *Graves v. McElderry*, 946 F. Supp. at 1574 (finding that a Democrats-first ballot violated the equal protection clause, but observing that a rotation ballot would be "potentially confusing" to voters).

[225]In an unusual and controversial decision involving rotation, a California trial court overturned the results of an election due to an alleged failure to follow proper rotation procedure; the decision was reversed. *Bradley v. Perrodin*, 131 Cal. Rptr. 2d 402, 417 (Ct. App. 2003) (finding that trial court erred by transferring votes from one candidate to another based on theory of primacy effect because law allows only that *illegal* votes may be "discarded"). *See also In re Election of Nov. 6, 1990 for Office of Atty. Gen. of Ohio*, 569 N.E.2d 447, 457 (Ohio 1991) (refusing to invalidate election results despite failure of elections officials to rotate candidate names properly, finding that contestor did not establish by clear and convincing evidence that election results would have been different with correct rotation).

[226]Alvarez et al., *supra* note 90, at 52–53.

[227]Garrett, *supra* note 90, at 255–56.

[228]*Id.* at 257. Garrett does not discuss any particular problems caused by rotation, although she does acknowledge that it required "that effective voter education using sample ballots had to be different in each district." *Id.* at 256.

that "[v]irtually none of the judicial cases includes actual evidence of voter confusion; instead, mere assertion of this phenomenon is usually accepted as a sufficient state interest to protect the regulation from constitutional attack."[229] After analyzing the results of the California recall, Garrett suggests that "state officials relying on voter confusion to support stringent regulation of ballot access ought to be required to provide more than mere assertions in the political and judicial arenas. Courts should be more skeptical of these claims and understand that they are likely to be superficially neutral rationales offered for regulations designed to protect the two major parties and to lock out new voices."[230]

Often when making voter confusion claims, opponents of precinct-level rotation have also expressed concern that rotation will inhibit the ability to distribute a uniform and supposedly effective sample ballot,[231] but this concern is also ill-founded. First, the publication and distribution of sample ballots is not a perfect exercise.[232] Admittedly, moving from fixed-position ballots to rotated ballots might require some adjustment in the use of sample ballots, but this adjustment would not be an insurmountable problem. Political parties have always provided "voting guides," and they could adjust their guides to focus on the names of the endorsed candidates, without focusing on where the candidate names would happen to appear on the contest list. In most elections, where there are far fewer candidates than in the 135-candidate California recall, there would seemingly be little difference between finding "the second name" and finding a particular candidate's name.

States that use rotated ballots employ a variety of means to provide "sample" ballots. Idaho, for example, displays a sample ballot with a notation that the voter's actual ballot on Election Day may show candidates in a different order.[233] Further, the fractured, multi-jurisdictional, multi-contest nature of American elections means that often, the only sample ballot that could be both accurate and complete would be a precinct-level ballot. In fact, in some counties in Ohio, voters can enter their name and address on the board of elections website and access their precinct's specific ballot.[234] This practice may well become common as more of the population gains computer access.

The concerns about sample ballots often focus on whether the lack of a uniform sample ballot will interfere with a voter's ability to "find" the candidate name on the ballot.[235] Some of the scholarship

about the California recall, however, shows that little-known candidates received a bump in votes in assembly districts whose ballots placed their names adjacent to one of the three most popular candidates.[236] Researchers surmise that some or most of those who voted for the little-known candidates were intending to vote for one of the three well-

[229]*Id.* at 255 (citing *Timmons v. Twin Cities Area New Party*, 520 U.S. 351, 370 (1997) (holding that antifusion laws prohibiting candidates from being affiliated on a ballot with multiple political parties do not violate first and fourteenth amendment associational rights); *Munro v. Socialist Workers Party*, 479 U.S. 189, 195–96 (1986) (finding constitutional a Washington statute providing that minor party candidates who receive less than one percent of votes cast in a primary election can not have their names placed on general election ballots).

[230]*Id.* at 257 (citations omitted).

[231]*E.g.*, *Sonneman v. State*, 969 P.2d at 640 (endorsing a change to fixed-position ballots, noting that "the actual ballots will be identical to the sample ballots, [so] the amendment may help prevent [voter] confusion.").

[232]As one commentator noted about the sample ballots published in Palm Beach County, Florida in 2000, "[t]he sample ballots available to voters prior to Election Day contained a material omission, as they did not show the placement of the punch holes running down the center of the ballot. They also contained instructions directing voters to mark their preferences to the right of the candidates' names, even though, for some candidates, one would mark a preference to the left of the candidates' names. Thus, the sample ballot gave voters no notice of the ballot confusion problems awaiting them on Election Day." Steven J. Mulroy, *Substantial Noncompliance and Reasonable Doubt: How the Florida Courts Got It Wrong in the Butterfly Ballot Case*, 14 STAN. L. & POL'Y REV. 203, 225 (2003) (citing Plaintiffs' Second Amended Complaint at 11, *Fladell v. Palm Beach County Canvassing Bd.*, No. CL 00-10965 AB (Fla. Cir. Ct. Nov. 20, 2000)); *see also* Niemi and Herrnson, *supra* note 13, at 317 (noting that in Duval County, Florida in the year 2000, the names of presidential candidates were spread over two pages, even though a sample ballot had been distributed with the instruction to "vote every page").

[233]In Idaho, images of sample ballots contain the legend "*Note: The order of the candidates on this sample ballot may not necessarily reflect the rotation in your precinct on election day.*" *E.g.*, < http://www.canyonco.org/Elected-Officials/Clerk/Clerk-Elections/2012-General-Election/2012-General_Canyon Sample.aspx > . Idaho Code § 34-903 gives the Secretary of State the authority to rotate names on the ballot in Idaho.

[234]< http://vote.franklincountyohio.gov/me/ > . In Ohio's Clermont County, in contrast, voters are told that sample ballots "may not have your exact corresponding Precinct listed, but the Candidates and Issues are the same ones you will be voting on." Boards of Elections might also consider generating precinct-level sample ballots and mailing or emailing these ballots to voters.

[235]*E.g.*, *Schaefer v. Lamone*, 2006 U.S. Dist. LEXIS 96855 at *8 ("An alphabetical system makes it easier for voters to find the candidate of their choice on the ballot.").

[236]Luttmer and Shue, *supra* note 23, at 17. The researchers concluded that proximity (or "adjacency") rather than name confusion drove the misvotes. *Id.*

known candidates.[237] Presumably, these voters had *found* the name of their preferred candidate; they had trouble, however, *accurately casting* the vote. Thus, because an "accurate" sample ballot will not necessarily advance accurate voting, the benefits of rotation apparently outweigh the costs—if any—of a different kind of sample ballot system.

Enacting precinct-level rotation is also good policy because it provides a fail-safe benefit that can help states to avoid electoral catastrophe. The 2000 election revealed the problems caused by punchcard ballots and hanging chads, and one goal of the Help America Vote Act was to prevent another Florida-style electoral meltdown.[238] While precinct-level rotation will not eliminate the impact of all types of electoral problems, it can certainly help to mitigate the impact of a variety of ballot-design issues, including misalignment of candidate names on the ballot[239] and problems caused by late-in-the-season disqualification of candidates.[240] It is at least possible that precinct-level rotation would have changed the result in Florida in the 2000 election, even with no change to the severely flawed ballot design.[241] Whatever the election's result, however, the use of precinct-level rotation—by spreading among all candidates the impact of the problems caused by the butterfly ballot[242]—would have increased the confidence of the American people in the integrity of the election's results.

In tort law, jurors deciding whether a product design is appropriate may consider whether the manufacturer has designed the product to avoid harms caused by the "foreseeable misuse" of the product.[243] Likewise, those who make and interpret the laws that govern ballot design should take into account foreseeable "misuse" of the ballot—both by those who design it and those who use it to vote—and implement rotation systems to mitigate or eliminate the impact of that misuse.

Even if legislators are not motivated by noble reasons, there may also be a selfish reason to enact ballot rotation statutes. Admittedly, rotation may marginally improve the odds of success for candidates in the non-major parties by giving them the coveted top spot on a portion of the ballots. State legislatures—in general, dominated by the two major parties—might therefore be unmotivated to pass a statute that mandates rotation.[244] Legislators might be more motivated, however, if they understand that their candidates could be victims of a systemic failure of butterfly ballot magnitude, or even that their candidates may end

up on fixed-position ballots in disfavored positions that would cause them to lose votes to proximity mistakes or other problems.[245]

Once again, the recent research may help to change the conventional wisdom. Apparently due to a focus on primacy effect, many non-rotation states have ballot positioning statutes that put the two major parties in the top two positions on the ballot.[246]

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[237]*See id.* at 32 (observing that "[a]djacency misvoting has important electoral implications because votes gained by adjacent candidates are votes lost by major candidates").

[238]Lillie Coney, *E-Voting: A Tale of Lost Votes*, 23 J. Marshall J. Computer & Info. L. 509, 510 (2005) ("HAVA's stated goal was to prevent another Florida 2000 Presidential election, which held the nation in limbo regarding who would be the next President of the United States, due to a number of factors, including faulty voting machines.").

[239]Roth, *supra* note 126, at 4–5 (noting that voters were confused by misalignment of names and voting levers).

[240]Norden et al., *supra* note 12, at 32 (citing Reid, *Nader's Name Is on the Ballot, But You Can't Cast a Vote For Him*, Cincinnati Enquirer, Oct. 20, 2004, at 5B).

[241]*See supra* note 136 and accompanying text.

[242]As the Supreme Court observed in 2008, voter confidence is important because it "encourages citizen participation in the democratic process." *Crawford v. Marion County Election Bd.*, 553 U.S. at 197.

[243]*E.g.*, *Ridenour v. Bat 'Em Out*, 707 A.2d 1093, 1096 (N.J. Super. 1998) ("As to the defendants who are subject to statutory or common law products liability exposure, plaintiff has the burden of showing that his misuse by pushing and rocking the machine was objectively foreseeable. It is for the jury to determine whether such manner of misuse was objectively foreseeable."); *see also Makadji v. GPI Div. of Harmony Enterprises, Inc.*, 2007 WL 1521221 at *3 (E.D. Pa. May 23, 2007) ("Plaintiff's claim that the [product] should have been designed to avoid foreseeable misuse is a tenable legal theory.").

[244]*E.g.*, Gerken, *supra* note 32, at 19 ("The people who decide who decides—the federal and state legislators who have the power to place our election system in the hands of nonpartisans—are partisans themselves. And if you are the party in control, what incentive do you have to abandon this important weapon in your political arsenal? It's not a coincidence that election reform proposals tend to come from the party out of power, which loses interest in reform the moment it gains a majority of seats.").

[245]*See* Roberts II, *supra* note 42, at 1–2 (noting that the Republican party and supporters of Robert Taft financed the campaign to support a ballot initiative that would change Ohio ballots from a straight ticket/party column ballot to an office block form with rotation, as a result of a fear that straight-ticket Democratic voters who would be voting to re-elect a popular governor would cost Taft his senate seat).

[246]*E.g.*, Fla. Stats. Ann. § 101.151 (putting in first position the candidates of the party that received the most votes in the Governor's race, with candidates of other parties following in order based on the gubernatorial vote); Colo. Rev. Stats. § 1-5-404 (awarding the top two slots to the candidates from the two major parties, with candidates of other parties following in two tiers).

These ballot-ordering laws indicate that legislators believe that the top spot in the contest is the best spot, and the second spot is the second-best spot.

Recent research, however, shows that this belief may not be accurate in contests with more than two candidates. The findings on proximity mistakes indicate that major-party candidates may be losing votes to position-influenced votes when those candidates appear in their guaranteed number-two spots in contests with three or more candidates.[247] Moving major party candidates to the bottom of a fixed-position ballot may not be the best solution for these candidates, however. Although the bottom spot on the candidate list lessens the likelihood of proximity mistakes, on some multi-candidate ballots it may increase the likelihood of losing a vote due to satisficing[248] or other issues. Thus, legislators need to understand that there are different kinds of disfavored positions on the contest list, and that a fixed-position ballot is not always in the best interests of their party's candidates.

Future research may identify more precisely which spots are the best and the worst in contests with certain numbers of candidates. For example, spot #2 might be identified as the worst spot in a three-candidate contest, as the second worst in a four-candidate contest, and the second-best in a two-candidate contest. Since the number of candidates often varies unpredictably from contest to contest and from election to election, the second-best ballot position (as well as the worst ballot position) would vary unpredictably as well. This information might therefore motivate legislators to enact rotation legislation to ensure that their candidates do not wind up in the worst position on the contest list on a fixed-position ballot.

Further, some scholars argue that primacy-effect votes are most likely to occur in down-ticket contests.[249] These contests, while often less glamorous, select the officeholders that provide patronage jobs and, more importantly, help officeholders develop their political reputations and build name recognition that will promote their election to higher offices down the road. It is reasonable that proximity-mistake votes are more likely to affect these contests as well, since voters, as discussed earlier, may be less likely to correct mistakes in these contests, even if the voters are made aware of them. More significantly, current research shows that voter mistakes are more likely to occur when voters must cast multiple votes in a single contest,[250] a fact

which might make state-level legislators more willing to implement rotation for the sake of their local-level party comrades.

State legislators, therefore, have self-interested reasons to enact precinct-level rotation. First, both major parties are probably routinely losing vote share to position-influenced votes in statewide elections. Further, their local-level party comrades are also losing votes to these predictable voter behaviors, especially in the multi-vote contests—such as city council and school board—that are common at the local level.

Admittedly, legislatures might be unwilling to change to a rotated ballot if they sit in states that award the top ballot position to the party in power in a state with a long-dominant party. In lottery states, however, and in states in which the party in power shifts back and forth, legislators of both parties—who know that their party's candidates may appear in a disfavored spot on a fixed-position ballot—may recognize the value of equalizing the benefits and burdens of the various positions on the ballot, and enact rotation voluntarily.

Thus, rotation statutes can be justified by reasons of both partisanship and public policy. By enacting precinct-level rotation, state legislatures can protect all candidates from the impact of primacy effect and voter error. Just as important, they can help to maintain voter confidence by demonstrating that the state is doing its part to fairly distribute the impact of the mistakes that can occur in any activity in which human beings are involved.

V. CONCLUSION

Losing candidates and election reformers have been attacking fixed-position ballots for generations, claiming that these ballots unfairly benefit

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[247]Herrnson et al., *supra* note 18, at 195 n. 16 (finding that candidates located in the middle of a list lose more votes to proximity mistakes than those located at the top and bottom of the list); Luttmer and Shue, *supra* note 23, at 32 (analyzing misvotes in the 2003 California gubernatorial recall election).
[248]*E.g.*, Brockington, *supra* note 83, at 4–5; *see also* Simon, *supra* note 83, at 118–20.
[249]*E.g.*, Augenblick and Nicholson, *supra* note 12, at 23 (finding that the lower the ballot position of a contest, the higher the number of undervotes or primacy-effect votes).
[250]Herrnson et al., *supra* note 18, at 78–80 (finding that mistakes increased when voters had to choose more than one candidate in a contest).

candidates in the top position. Unfortunately, they have focused almost exclusively on problems caused by primacy effect, an issue that presents an unsympathetic picture. The problem of primacy-effect votes is a real one, but too many have a hard time seeing beyond voters whom they perceive to be ignorant or, at best, easily influenced. Further, lawsuits that seek to overturn fixed-position ballot statutes based on primacy-effect votes alone are asking courts to change laws based on the "problem" of valid, accurately-cast votes.

Recent research on ballot-flaw-induced votes and proximity-mistake votes, however, gives new justifications to those trying to move states to use ballot rotation. This research shows that certain flawed ballot designs lead to predictable mistakes; more importantly, other research shows that voter mistakes are predictable when candidate names are located in certain positions, even on well-designed ballots. Although more research will be done, the current research seems to show that candidates in specific positions on a ballot may lose up to 2–3% of their votes due to unavoidable human error. Since many elections are decided by margins smaller than 1%, candidates can argue that being slotted into disfavored positions on a fixed-position ballot is a constitutional violation. Perhaps more importantly, state legislators in the two dominant parties may recognize that the best way to ensure that they themselves will not lose a disproportionate number of votes to proximity mistake is to pass rotation statutes that ensure that each candidate's name is located in each position on the contest list in an approximately equal number of precincts.

Some reformers—or some who are resistant to reform—may argue that fixed-position ballots are fine if the candidates for each position are chosen by lot, in a "fair" procedure. Others may note that most modern ballots give voters the opportunity to review their ballots and fix their mistakes. Neither assignment by lot nor the opportunity to fix mistakes solves the problem of fixed-position ballots.

Determining ballot position by lot provides a veneer of fairness, but the lottery method merely uses a fair method to impose an unfair result. A court would not uphold a state law that needlessly disenfranchised 1–3% of the supporters of certain specific candidates, even if the candidates who suffered the loss were chosen at random. Fixed-position ballots can have exactly that effect. Further,

votes cast in error are worse than residual votes; while a voter who casts a residual vote may lose his or her vote in that contest, the voter who casts a vote in error not only loses a vote for a chosen candidate, but awards it to a candidate the voter did not intend to choose.

Allowing voters to fix their mistakes does not solve the problem either. While being able to fix errors is important for many reasons, our knowledge of human nature—and human voters—tells us that many voters will not take the time and trouble to fix mistakes, particularly in down-ballot contests on our long and complex American ballots. Candidates and their supporters, therefore, have both a practical and a constitutional interest in being able to vote as accurately as possible from the start. Further, rotated ballots will not only equalize the impact of primacy effect and proximity-mistake votes; they provide a fail-safe to prevent electoral catastrophe resulting from unnoticed and sometimes unavoidable ballot design problems.

Voting should not be a test. States should do everything they can to make ballots easy to vote accurately. No matter how much ballots are improved, however, each ballot will inevitably include favored and disfavored positions, positions that impose benefits and burdens on the supporters of the candidates in those positions. These benefits and burdens can and should be spread as equally as possible among the supporters of all candidates in a contest. Existing ballot rotation systems show that precinct-level rotation is a fiscally and technologically feasible way to accomplish this goal.

If and when all states move to ballot rotation systems, we will seldom be aware of the benefits of the change. A crisis averted is often hard to recognize. But ballot rotation laws are like seatbelts: we need to put them in place before we need them. If we try to wait until an election starts to skid away from us, we'll be too late.

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