

Ballot Initiatives and Residual Ballots in the 2004 Presidential Election

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Abstract

An increasing number of public policy issues are decided by ballot propositions in the United States. However, there is some concern about relatively high levels of voter abstention on some ballot propositions. We examine residual votes on ballot issues and the presidential contest in 34 states that had propositions on the ballot in the 2004 election (residual votes are the difference between the total number of ballots cast and the number of valid votes cast in a particular contest). We find that residual vote levels for ballot issues are substantially higher and more varied than for the presidential contest. Residual votes in both types of contests are a function of ballot features, voting technology, campaign context, and demographic measures. However, some factors, especially voting machinery, have very different effects on residual votes for president than on residual votes for ballot issues. These results have implications for direct democracy and election reform in the United States.

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Introduction

Ballot initiatives and referenda are used to decide many public policy issues, from taxes and bonds to marriage and booze. Even election reform has been the subject of ballot propositions. Most states allow some type of process for citizens to vote on ballot issues. Furthermore, the United States has witnessed a surge in use of ballot initiatives over the last thirty years (Smith 2005, 407; Matsusaka 2005, 159).

The growing use of ballot initiatives demands a closer look at voting behavior on ballot initiatives. There is an ongoing debate about the contribution of ballot propositions to democracy in the United States.¹ We are interested in examining why some voters fail to cast a vote for or against some ballot issues. Much scholarship focuses on the degree to which ballot propositions foster citizen engagement, yet little assess the quality of voter participation on the ballot initiatives themselves. We assess the quality of voting on ballot initiatives by measuring residual votes (the difference between the total number of ballots cast and the number of valid votes cast for or against an initiative or a referendum). If the point of direct democracy is to have citizens make public policy decisions, then it is important to measure the degree to which full voting participation is achieved on ballot issues. Residual votes can be the result of undervotes (not selecting any choice on the ballot) or overvotes (selecting too many choices). If a large number of voters abstain from ballot issues, and if abstention is a function of voting technology and ballot design, then we might question whether election results reflect the will of the voters.

Residual votes occur not just because voters intentionally fail to cast a vote for them; sometimes residual votes happen unintentionally. For example, some November 2005

¹ See Bowler, Donovan and Tolbert (1998) for a collection of essays discussing various aspects of the arguments for and against initiatives.

propositions about election reform raised questions. Five initiatives appeared on the ballot in Ohio, four of which were backed by Reform Ohio Now, a group calling for election reforms that were reportedly a response to the November 2004 election.² Pre-election polling indicated that at least two of the issues would pass, but when the votes were tabulated, none of the issues passed and the polling showed significantly different results from the final vote tallies. Especially mysterious to some observers was that polling on Issue 1, an unrelated issue, was very accurate (see Fitrakis and Wasserman 2005). It may be that pre-election polling on ballot initiatives in odd-year elections is highly unreliable. On the other hand, perhaps the disparity between polling and election results raises questions about whether the process of casting votes on initiatives reflects the will of the people. Prior to the 2000 election citizens did not often question whether their votes were counted as cast. However, the 2000 presidential election and the recount battle in Florida focused attention on voting methods and election procedures in the United States, leading to passage of the Help America Vote Act of 2002 and a shift to new voting equipment in many parts of the country.

With notable exceptions, state ballot propositions rarely garner as much national attention as the presidential contest, but recent events point to the importance of understanding both accidental and intentional residual votes on ballot initiatives. It appears to be a stretch to assume that all residual ballots on ballot initiatives are the result of intentional undervoting that occurs because of lack of interest. Some undervotes and overvotes on ballot initiatives are not cast on purpose, as indicated by earlier works focusing on ballot design and voting equipment in selected

² Ohioans voted on five issues, four of which were election reform issues: Issue 2 would have allowed easier absentee voting, Issue 3 would have revised campaign contribution limits, Issue 4 would have established an independent commission to redraw congressional districts, and Issue 5 would have established an “independent board” to oversee elections (see <http://www.commoncause.org/site/pp.asp?c=dkLNK1MQIwG&b=880499> accessed 23 November 2005).

states (Nichols 1998; Bowler, Donovan and Happ 1992; Darcy and Schneider 1989; Magleby 1984).

It should be noted that since the 2000 election, in assessing the progress of reforms, particularly voting equipment changes, scholars have often examined races near the top of the ballot. However, they have rarely examined the effects of equipment on voting far down the ballot (but see Sinclair and Alvarez 2004), such as initiatives, let alone the effects of ballot layout and design on the ability to cast a valid vote (but see Kimball and Kropf 2005a; Niemi and Herrnson 2003; Sinclair et al. 2000). In addition, recent literature on ballot initiatives has focused almost exclusively on the effects of ballot initiatives on voter turnout, but rarely examines whether voters are actually participating in the ballot propositions that supposedly sparked their participation—that is, are people casting votes for (or against) the propositions. We are particularly concerned with the ability of voters to cast valid votes on ballot initiatives, especially since prior research indicates that both voting equipment and ballot design have an effect on residual votes on offices toward the top of the ballot.

In this study, we examine residual votes for president and for ballot propositions at the county level in the 34 states that had issues on the ballot in the 2004 general election. We find that residual vote levels for ballot issues were substantially higher and more varied than for the presidential contest. Residual votes in both types of contests were a function of ballot features, voting technology, campaign context, and demographic measures. However, some factors, especially voting machinery, have very different effects on residual votes for president than on residual votes for ballot issues. These results have implications for direct democracy and election reform in the United States.

The Impact of Direct Democracy

There is a great deal of recent literature about the role of direct democracy (initiatives, referenda and recalls) in encouraging citizen participation, knowledge and confidence in government—the so called “educative effects” (Tolbert and Smith 2005; Tolbert, Grummel and Smith 2001; Smith 2002, 2001; Tolbert, McNeal and Smith 2003; Lacey 2005). For example, increases in voter turnout in direct democracy states may occur because ballot propositions could create “a sense of civic duty and political efficacy” (Morrell 1999/Pateman 1970 in Tolbert, Grummel and Smith 2001), which energizes voter participation and knowledge (Smith 2002; Tolbert, McNeal and Smith 2003). Direct democracy may also stimulate voter interest because of the nature of the propositions—they may tend to address timely and controversial public policy debates. Smith (2001) argues that higher salience contests increase voter turnout because the wealth of information available reduces the costs of voting. We believe that less attention has been devoted to the quality of voter participation on ballot propositions and whether many voters actually make selections on ballot propositions (but see Nichols 1998; Bowler, Donovan and Happ 1992). Some portion of the public is casting intentional undervotes, but a substantial part may actually intend to cast a vote but are thwarted by the ballot or voting technology. In assessing the quality of participation, these two ideas—intentional and unintentional residual votes should both be analyzed.

Residual Votes

Following the 2000 presidential election, a substantial body of literature has developed examining the predictors of residual votes, although these studies tend to focus on highly salient, competitive contests at the top of the ballot. Theories explaining the occurrence of residual votes can be divided into three main perspectives. First, there is evidence that some residual votes are intentional, the result of lack of interest in a contest, unappealing candidates, little information, or voter fatigue on long ballots with many contests (Magleby 1984; Bullock and Dunn 1996; Kimball, Owens, and Keeney 2004; Knack and Kropf 2003a; Vanderleeuw and Utter 1993; Wattenberg et al. 2000). However, contests at the top of the ballot, especially the presidential race, have very low rates of intentional undervotes (Knack and Kropf 2003b; Tomz and Van Houweling 2003).

A second perspective suggests that some residual votes are the unintentional result of faulty voting technology or confusing ballot features. For example, Votomatic punch card ballots tend to produce higher rates of unrecorded votes than other voting methods (Caltech/MIT 2001; Bullock and Hood 2002; Knack and Kropf 2003; Alvarez, Sinclair, and Wilson 2003; Kimball, Owens, and Keeney 2004; Buchler, Jarvis, and McNulty 2004; Ansolabehere and Stewart 2005). Furthermore, error prevention and correction mechanisms (such as precinct counters for optical scan ballots) tend to reduce residual votes for the presidency (Nichols and Strizek 1995; Knack and Kropf 2003; Kimball, Owens, and Keeney 2004; Kimball 2003; Bullock and Hood 2002; Tomz and Van Houweling 2003).

In addition, recent studies focus on ballot design features that tend to produce residual votes. For example, the occasional practice of listing candidates for the same office in multiple

columns or on multiple pages produces higher rates of unrecorded votes (Sinclair et al. 2000; Jewett 2001; Herron and Sekhon 2003; Kimball, Owens, and Keeney 2004). Another study identifies seven ballot features associated with residual votes, overvotes and undervotes in gubernatorial elections (Kimball and Kropf 2005a).

A final research perspective focuses on equal protection issues, analyzing the relationship between unrecorded votes and demographic variables such as ethnicity or age. For example, there is extensive evidence that unrecorded votes are more common in precincts and counties with large populations of racial and ethnic minorities, low-income residents, less-educated citizens, or elderly voters (Walker 1966; Vanderleeuw and Engstrom 1987; Darcy and Schneider 1989; Sheffield and Hadley 1984; Nichols and Strizek 1995; Nichols 1998; Herron and Sekhon 2003; Knack and Kropf 2003a; Tomz and Van Houweling 2003; Sinclair and Alvarez 2004). Furthermore, there appears to be an interaction between demographic variables and some voting methods and ballot features. The association between socioeconomic measures and unrecorded votes is weaker in places using equipment or ballot features that make it easier for voters to complete a valid ballot (Knack and Kropf 2003a; Tomz and Van Houweling 2003; Kimball, Owens, and Keeney 2004; Buchler, Jarvis and McNulty 2004; Kimball and Kropf 2005a). By the same token, the elevated rate of unrecorded votes associated with confusing ballots and voting technology tends to fall disproportionately on precincts and counties with high concentrations of poor, elderly, or minority voters (Kimball and Kropf 2005a; Knack and Kropf 2003a; Darcy and Schneider 1989; Nichols 1998; Kimball, Owens, and Keeney 2004; Herron and Sekhon 2003; Tomz and Van Houweling 2003; Alvarez, Sinclair and Wilson 2004).

Residual Votes and Ballot Initiatives

Most of the studies on residual votes are based on analyses of contests at the top of the ballot (such as presidential or gubernatorial elections), where residual votes are less common. It is worth examining down-ballot contests (where most ballot initiatives reside) to see if voting technology and ballot design features have an impact in those races as well. The few studies that have examined down-ballot contests tend to find significantly higher rates of residual votes (e.g., Magleby 1984; Nichols and Strizek 1995). These studies also find voting technology and ballot effects that are much larger than effects found in top-of-the-ballot contests (Darcy and Schneider 1989; Nichols and Strizek 1995; Nichols 1998; see also Sinclair and Alvarez 2004). However, much of the voting technology and ballot research examining ballot propositions is fairly limited in its geographic scope.

This literature has made important contributions in examining aspects of voting equipment (Nichols 1998) and ballot design (Darcy and Schneider 1989), as well as reasons why some residual votes are intentional. For example, Magleby finds that the longer the proposition, the less likely a voter will cast a vote on it (see also Bowler, Donovan and Happ 1992; Karp 1998). Even if a citizen has a strong opinion on the issue, the initiative may be worded in such a complicated manner that the voter may not understand it once they get to the voting booth. This is important since there have been cases of lawsuits filed to include the entire wording of the proposition on the ballot, as happened in 2004 in Wyoming.

Several scholars also note that residual votes tend to be higher on ballot propositions when they are placed farther down the ballot or on the back side of a paper ballot (Magleby 1984; Bowler, Donovan and Happ 1992; Darcy and Schneider 1989; see also Sinclair and Alvarez 2004; Hamner and Traugott 2004). Other studies note that residual vote rates for ballot

propositions tend to be higher when lever voting machines are used (Mather 1964; Thomas 1968; Nichols and Strizek 1995; Nichols 1998). It is a challenge to place wordy propositions on lever machines that are designed with a grid for office titles and candidate names (Roth 1998). Further, residual votes are more common on initiatives proposed by the legislature than on citizen-proposed initiatives (Mueller 1969; Magleby 1984; Bowler, Donovan and Happ 1992). Legislative proposals tend to reach the ballot with little publicity, while citizen-proposed initiatives tend to be part of a larger marketing campaign. Overall, existing research suggests that a number of factors may influence residual votes on ballot propositions. Given the rapidly changing voting technology in the United States, further research is needed to examine the impact of technology at both ends of the ballot.

Methods

Since elections are administered at the county level in all but six states, our data collection includes the number of ballots cast, vote totals for president and for selected ballot initiatives, voting technology, and demographic characteristics for each American county in the 2004 general election. In states where elections are administered by municipalities or townships, we aggregate the vote totals and voting technology data to the county level. In four states (Illinois, Missouri, Maryland, and Virginia), some cities have separate election administration authorities. These cities are treated as separate “counties” in this dataset. We treat Alaska as one observation since elections are administered by the Alaska state government. Adding the District of Columbia as another observation produces a total of 3123 geographic units that cover the entire country. There were 34 states with initiatives on the ballot in the 2004 general election. For each state with more than one ballot proposition, we chose to examine the one with the

closest outcome (see the appendix for the list of ballot issues and states in our data). These states provide a data set of 1,999 counties for the analyses in this paper.

To measure the frequency of residual votes for ballot initiatives and for president in each county, we calculate the difference between the total number of ballots cast and the number of votes cast for the contest and use it as our principal dependent variable in the analyses that follow. Figure 1 provides the distribution of residual vote percentages for president and for the ballot initiatives in our sample. The distribution of residual votes across counties is somewhat skewed, with outliers at the high end. In our sample of 1,999 counties, there were 872,117 residual votes for president. Residual vote percentages for presidential contests range from 0.02% to 20.6%, with a median of 0.9%, a mean of 1.2%, and a standard deviation of 1.1%. By comparison, residual votes were much more common on ballot issues. In the same sample of counties, there were 6,790,140 residual votes for the selected ballot issues. Residual vote percentages for ballot issues range from 0.3% to 76.1%, with a median of 6.5%, a mean of 9.2%, and a standard deviation of 7.9%. As the histograms indicate, residual vote percentages tend to be much higher and more varied for ballot issues than for president. More than 95% of the counties in our sample had residual vote rates less than 5% in the presidential contest. By comparison, almost 75% of the counties had residual vote rates greater than 5% for ballot issues.

[Figure 1 here]

Multivariate Analyses

To examine various factors that may influence residual votes, we estimate a model of residual votes using generalized least squares regression. In considering what independent variables affect the level of residual votes on ballot initiatives, we argue there are factors that

predict intentional casting of residual votes and factors that predict unintentional casting of residual votes. There are also several demographic factors that arguably could serve as proxies for either intentional or unintentional predictors of residual votes. We discuss data collection for each set of independent variables.

Unintentional Residual Votes

The major focus of this paper is voting technology's effect on residual votes on ballot initiatives. We collected data on voting technology used in the November 2004 general election in each county, gathered from state and local election officials (see Kimball and Kropf 2005b). Generally, five different methods of voting are used in the United States: paper ballots, lever machines, punch card machines, optical scan ballots, and direct recording electronic (DRE) machines.³ Within each of these general categories, further distinctions can be made. Punch card methods are divided between Votomatic varieties (in which the punch card is separate from the booklet listing the offices and issues up for election) and the Datavote system (in which offices and candidates are printed directly on the punch card). Optical scan systems and electronic machines are currently the newest voting technologies. Optical scan systems vary depending on where ballots are counted: at a central location (like the county courthouse) or at the voting precinct. One advantage of the precinct-count optical scan systems is that they give voters a chance to discover and correct potential mistakes (overvotes and undervotes). The central-count systems do not have such an error-correction feature.⁴ Thus, we expect to find lower residual vote rates on precinct-count optical scan machines.

³ One can find a detailed description of each type of voting equipment in a variety of sources (Fischer 2001; Caltech/MIT Voting Technology Project 2001; Brady et al. 2001).

⁴ Some counties have precinct-count optical scan balloting but do not activate the error correction feature when scanning the ballots. These counties are coded as central-count systems.

DRE machines can be divided into older and newer varieties. Older DREs (such as the Shouptronic 1242, which was designed to mimic lever machines) present the entire full-faced ballot at once and typically use a push-button interface (Caltech/MIT Voting Project 2001). The newer generation of DREs (such as the iVotronic and Accuvote-TS machines) typically use a touch-screen interface in which voters to scroll through the offices and issues on the ballot (as in Votomatic punch card ballots).⁵

We create dummy variables for each of the different types of voting technology described above. The regression model excludes central-count optical scan as the comparison category since it is one of the newer voting methods and is used in more counties than any other method. Since DRE voting machines and optical scan systems are rapidly replacing punch card ballots and lever machines, partly due to deficiencies in the latter systems, one would expect to find lower residual vote rates with the newer technologies. However, there is some concern that down-ballot contests, particularly ballot initiatives, may be overlooked by some voters using lever machines or older generation DREs with a full-face ballot (Roth 1998). Thus, we expect to find higher residual vote rates for ballot propositions on lever machines and full-face DREs.

Second, we consider ballot design issues as a source of unintentional residual votes. We consider whether a straight party feature contributes to increased residual votes. Kimball, Owens and Keeney (2004) found that the straight party punch reduces fewer residual votes for the presidential race. However, ballot propositions are non-partisan and not covered by the straight-party device, even though people may believe they have completed their ballot once they use the straight party feature (Nichols 1998: 110; Darcy and Schneider 1989: 360; Niemi and Herrnson

⁵ In some states, particularly in the Northeast, not all ballots are cast using the same technology. In those cases, we code the voting technology as the equipment used by at least 75% of the voters. If no single method was used by at least 75% of the voters, the county's voting technology is coded as a "mixed" system. Most of the counties with mixed systems are in states where elections are administered by municipalities or townships.

2003). Thus, we hypothesize that residual votes on ballot issues are more common in states with the straight-party option.⁶

Another ballot feature we examine is the method for marking the ballot on optical scan systems. Some require voters to darken an oval, as in many standardized tests and government forms. Other optical scan systems require voters to draw a line connecting the point and tail of an arrow, a method which does not mimic other common written tests or forms. Previous studies find higher rates of residual votes on ballots with the connect-the-arrow format (Bullock and Hood 2002; Kimball and Kropf 2005a), which we expect to find in this study. We also include two ballot features specific to the presidential contest. Nevada is the only state which includes a “None of these candidates” choice in federal and statewide candidate elections, a potentially appealing choice for voters who might otherwise abstain from the contest. In the 2004 presidential election in Nevada “None of these candidates” outpolled all third party candidates except Ralph Nader. Not surprisingly, Nevada has had one of the lowest residual vote rates in recent presidential elections (Kimball, Owens, and Keeney 2004). In addition, states vary in the way they handle write-in votes. Only fifteen states count all write-in votes, while the remaining states either do not allow write-ins for president or only count write-in votes for declared candidates. We include separate dummy variables for Nevada and for states that allow and count all write-in votes for president. We expect fewer residual votes for president in those states.

⁶ North Carolina and South Carolina have a straight-party option but it comes after the presidential contest and thus does not apply to the presidential contest. We code these two states as not having a straight-party option for the presidential election analysis, but we code both states as having a straight-party feature for the analysis of ballot initiatives.

Intentional Residual Votes (Undervotes)

In terms of intentional residual votes (or more specifically, intentional undervotes), the campaign context plays a particularly important role. People are more likely to cast a vote in highly salient contests and more likely to abstain from boring contests.⁷ Some studies find that highly salient ballot initiatives boost voter turnout (Smith 2001; Lacey 2005). Measurement of salience of ballot propositions has been a topic of conceptual debate in the literature. Some measure the salience of specific ballot issues by examining the news coverage that the proposition garners (Smith 2001; Lacey 2005). In contrast, others measure the salience of the overall ballot proposition enterprise by counting the number of initiatives on the ballot in a given state (Tolbert, Grummel, and Smith 2001; Tolbert and Smith 2005; Tolbert, McNeal and Smith 2003).

To assess the impact of issue salience on residual votes, we opt for a measure of news coverage similar to the one used by Smith (2001). For each state, we measure the salience of a ballot proposition by finding all articles on an issue in the state's largest newspaper from September 1 to November 9, 2004.⁸ In most cases, we use the News Library database (<http://www.newslibrary.com>) to find articles, editorials, and letters to the editor written about the subject of the ballot proposition. Then we sum the number of words in all newspaper coverage of the ballot issue as our measure of issue salience.⁹ The newspaper and search

⁷ For example, Knack and Kropf (2003) estimate that only about 0.75% of voters report intentionally not voting for the president, the most salient of contests.

⁸ We used circulation figures reported in *Newspaper Directory* to find the largest newspaper in each state. The one exception is California, where we searched *The San Francisco Chronicle*, the state's second largest newspaper. The newspaper with the largest circulation in California, *The Los Angeles Times*, was not available in several databases for the time period we needed.

⁹ Some of the largest circulation newspapers were not available on News Library, so we used either Lexis/Nexis or the archive of the paper itself. We used Lexis/Nexis for *The Omaha World-Herald* (Nebraska) and *The Arkansas Democrat-Gazette* (Arkansas). We used the newspaper archives located on the paper's website for *The Fargo Forum* (North Dakota), *The Casper Star Tribune* (Wyoming), *The Billings Gazette* (Montana) and the *Providence Journal* (Rhode Island).

keywords for each state are listed in Appendix B. We expect residual votes on ballot issues to decrease as issue salience increases.

A second factor that may indicate whether citizens will take the time to vote on an issue is the manner in which the initiative reaches the ballot—whether a citizen proposal or a legislative-initiated proposition. Voters may have more information about citizen-initiated proposals because they require voter input in a signature gathering process before they reach the ballot (Bowler, Donovan and Happ 1992; Nichols 1998: 106; Magleby 1984). In contrast, legislative propositions reach the ballot without a similar sustained public campaign. Our issue salience measure provides some support for the claim that legislative proposals generate a lower public profile than other ballot initiatives. Ballot propositions received significantly fewer articles and words of newspaper coverage in states where the legislature put the issue on the ballot. We create a dummy variable to indicate whether or not a proposition was put on the ballot by the legislature. We expect higher rates of residual votes on propositions placed on the ballot by the legislature.

For the presidential contest, we attempt to create a similar measure of campaign salience. We create a dummy variable to identify the “battleground” states in the presidential campaign.¹⁰ These are states where the presidential vote was close. Thus, voters are more likely to cast a vote for president since their vote is more likely to make a difference in those states. In addition, the bulk of the presidential campaign, in terms of advertising, candidate visits, and staff activity, took place in the relatively small number of battleground states. The disproportionate location of presidential campaign activity likely produced greater interest in the election among voters in

¹⁰ In our sample, battleground states are Colorado, Florida, Maine, Michigan, Nevada, New Hampshire, New Mexico, Ohio, and Oregon. The other four battleground states (Iowa, Minnesota, Pennsylvania, and Wisconsin) did not have any ballot propositions in 2004.

battleground states. As a result, we expect lower rates of residual votes for president in the battleground states.

Equal Protection Issues

Finally, there is a set of control variables potentially explaining residual votes that are often associated with equal protection issues. Previous studies find that they tend to be significant predictors of residual votes. In addition, some of the demographic variables may exacerbate the potentially negative effects of ballot design and voting equipment (Darcy and Schneider 1989; Kimball and Kropf 2005). As control variables, we include the percentage of a county's residents who are African-American, the percentage over the age of 65, the percentage of adults with a high school degree, and the natural log of the county's population, all obtained from the Census Bureau. Based on previous studies, we expect residual votes to be positively correlated with the size of the African-American and elderly populations, and negatively correlated with the percentage of high school graduates. As for population, previous studies indicate that the smaller the county, the larger the number of residual votes (Knack and Kropf 2003a, 887; Kimball, Owens, and Keeney 2004; Brady et al. 2001). This finding may be due to election administration—larger urban counties tend to have more professional operations than smaller rural counties. Thus, we expect the natural log of the population to be negatively correlated with residual votes.

We examine two multivariate models of residual votes, one for the presidential contest and one for ballot propositions. The dependent variable is the percentage of ballots cast in each county that fail to record a valid vote for the contest. We use generalized least squares regression

for the estimation.¹¹ Since the number of voters in each county varies dramatically, we weight each county by the number of ballots cast, which has the effect of counting each voter equally. In other words, it prevents the results from being overly influenced by the many small counties that have relatively few voters.

Results

The results of our regression analyses are presented in Table 1. The first model examines residual vote percentages in the presidential contest, while model 2 examines residual votes for ballot issues. Overall, the results indicate that residual votes in both types of contests are a function of ballot features, voting technology, campaign context and demographic measures. However, the various predictors, especially ballot features and voting technology, do not always influence residual votes for president in the same way as residual votes for ballot propositions.

First, we find that ballot features influence residual votes for president and for ballot propositions mostly as we hypothesized. The straight-party punch, while a modest deterrent to residual votes for president, produces a substantial increase in residual votes for ballot propositions. Controlling for all other factors, residual vote rates on ballot propositions are 2.7% higher in states with a straight party ballot option. In other words, this suggests that the straight-party option lops off roughly 2.7% of the electorate for ballot propositions. At a theoretical level, there is conflict between advocates of responsible party government and advocates of direct democracy (Mansbridge 1980). We find a similar practical conflict with a ballot feature that promotes straight-party voting but discourages participation in ballot initiatives.

¹¹ Other studies have used negative binomial regression to model residual votes (Bullock and Hood 2002; Sinclair and Alvarez 2004; Kimball and Kropf 2005). We find very similar results using the negative binomial estimation in this study. We present the least squares regression estimates here for ease of interpretation.

[Table 1 here]

Consistent with most previous studies, we also find that the connect-the-arrow ballot format produces higher rates of residual votes for president. However, the arrow format has no statistically significant impact on residual votes for ballot propositions. As expected, residual votes for president were less common in Nevada (the only state offering a “None of these candidates” choice for president) and in states that counted all write-in votes.

Second, we find that voting technology affects residual votes in both types of races, but again in different ways. In the presidential contest, Votomatic punch cards perform significantly worse than all other systems in terms of residual votes, a result consistent with previous studies. On ballot initiatives, however, punch cards produce significantly lower residual vote rates than some other systems (lever machines, full-face DREs, and paper ballots). The voting systems with error-correction features designed to prevent overvotes (precinct-count optical scan systems, DREs, and lever machines) tend to perform the best in terms of minimizing residual votes for president. However, on ballot propositions, lever machines stand out as a very poor voting technology. Residual vote rates on ballot propositions are a whopping 21.7% higher on lever machines than on central-count optical scan systems. To put this in more substantive terms, the effect of lever machines represents an almost three standard deviation increase in our measure of residual votes.

Turning to other voting systems, precinct count optical scan machines do not perform significantly better than central count machines for ballot initiatives. Our results also indicate that paper ballots and full-face DREs produce significantly higher residual vote rates on ballot propositions than other voting systems. The relatively poor performance of full-face DREs on

ballot propositions is expected, since full-face DREs were designed to mimic lever machines. It is possible that some voters simply miss ballot initiatives on a large full-face DRE ballot.

In addition, touch-screen DREs perform better than almost all other voting systems in terms of residual votes on ballot propositions. Touch-screen DREs take voters screen by screen through all of the races, and some models will not allow voters to finish until they have scrolled through all of the contests. Thus, touch-screen DREs may make it harder to skip the races at the end of the ballot than other voting systems. Surprisingly, those counties with more than one system—mostly small counties in the Northeast—tend to have significantly lower levels of residual votes on ballot propositions than do central count optical scanners.

Third, we find evidence that the campaign context influences residual votes for president and for ballot issues. Beginning with the top of the ballot, residual votes for president were significantly less common in battleground states. However, in comparing regression coefficients, the size of the battleground state effect is roughly equal to or smaller than the effects of several ballot features and voting systems. Thus, the geographic targeting of the presidential campaign does not overwhelm other sources of residual votes for president.

Similarly, issue salience tends to reduce the frequency of residual votes for ballot issues. Residual votes on ballot propositions were less common in states with voluminous newspaper coverage of the proposition.¹² Our estimates indicate that, controlling for other factors, a ten thousand word increase in news coverage of a ballot issue (roughly ten articles) produces a .6% drop in the residual vote rate on the proposition. Finally, the method of placing the proposition on the ballot has a substantial impact on residual votes. According to our results, the residual

¹² Measuring salience in terms of number of articles rather than number of words produces similar, although somewhat weaker, results.

vote rate on ballot issues is roughly 5% higher in states where the legislature put the proposition on the ballot.

Fourth, demographic factors produce somewhat comparable results, although the effects are larger for ballot propositions. Consistent with previous work, counties with more African Americans and Latinos see higher levels of residual ballots for both the presidency and ballot initiatives. Counties with more citizens who are 65 and over have higher levels of residual votes on ballot initiatives, perhaps consistently with the idea that voting on the ballot initiatives may be confusing; if font is small or placement confusing, these problems may fall especially on the elderly. For the presidential contest, which is at the top of the ballot, this may not be as much of a problem. Counties with higher incomes and population tend to produce lower percentages of residual votes for the presidential contest, but not for ballot initiatives.

Conclusion

Given the substantial debate that has developed about the educative effects of ballot propositions in the United States, we argue it is important to study the quality of participation on these questions. Not unexpectedly, we find that residual votes are much higher on ballot propositions than they are in the presidential contest. Nevertheless, in both types of contests residual votes appear to be a function of both intentional and unintentional forces. Indeed, for both, we find that residual votes are a function of ballot features, voting technology, the campaign context, and demographic factors. However, some ballot features and voting methods appear to influence residual votes in different ways, depending on the type of contest. All in all, our evidence seems to indicate that some people may be thwarted by voting technology and ballot features in their efforts to participate in ballot proposition elections.

The fact that ballot features and voting technology have substantial effects on whether voters make a selection on ballot initiatives raises some questions about the quality of direct democracy in the United States. Those interested in promoting full voter participation on ballot propositions should take note of the ballot features and voting methods that reduce residual votes in those types of contests. Highly salient initiatives may draw people to the polls and cause them to vote on the initiatives, but voting technology and ballot design may inhibit full voter participation. One bit of good news is that punch card ballots (which increase residual votes for president) and lever machines (which dramatically increase residual votes for ballot propositions) are being replaced by newer voting methods in the United States.

This work also adds to the growing body of evidence that indicates that not all voting technology is created equal, however, with a slightly different twist. In particular, when one compares residual votes on down-ballot initiatives with those of the presidency, it may be that some equipment is not as advantageous as first thought. For example, lever voting machines perform quite well in the presidential election but perform horribly on ballot propositions. Touch-screen DRE's produce lower residual votes for both types of contest, whereas precinct count optical scan machines provide no advantage over central count machines for ballot initiatives. We suspect this is probably because of the problem of many voters still needing to turn over the optical scan ballot when voting on initiatives, referenda and recall issues. Down-ballot contests are often placed on a second page (or back page), and thus may be missed by some voters. Changes to encourage voting on paper-based ballots may be as easy in changes to make ballots more usable (see Kimball and Kropf 2005a).

Some may wonder if any of these residual vote effects could change the outcome of an election on a ballot proposition. We cannot answer this question with much certainty, but we can

point to a suggestive case from our sample. One of our cases is an Alabama proposition (amendment 2) to remove segregation language regarding education and voting from the state constitution. Amendment 2 narrowly failed in 2004 (by less than 2,000 votes). Out of almost 1.9 million ballots cast, over 505,000 failed to cast a vote on amendment 2 (a residual vote rate of roughly 27%). In addition, there is a positive correlation ($r=.43$) between a county's residual vote rate on amendment 2 and its share of African-American residents, a somewhat surprising finding given the substance of the amendment. As it happens, Alabama is one of the states with a straight-party option on the general election ballot, a feature that significantly increases residual votes on ballot propositions. In addition, Mobile and Montgomery counties, two of the largest in the state, used full-face DRE voting machines in the 2004 general election. Our analysis suggests that these machines produce higher rates of residual votes on ballot propositions (both counties had higher than average residual vote rates for amendment 2). If the state did not use the straight-party ballot feature or if the two large counties used different voting technology, perhaps there would have been enough votes for the amendment to pass.

Finally, there is always a need for further study. There may be other ballot design issues that affect voting on ballot propositions. We are in the process of coding paper-based ballots used in the 2004 election for many of the features that survey methodologists find to be important in designing questionnaires that minimize non-response. These features include the readability of ballot propositions, their location on the ballot, and other design elements. To ensure full participation in our elections, it is important to minimize the amount of confusion voters confront on the ballot.

Appendix

List of States and Ballot Initiatives and Referenda Examined in 2004

State	Initiative Number	Initiative Topic
Alabama	Amendment 2*	Repeal sections on race and education in the Alabama Constitution
Alaska	Measure Number 2	Legalize marijuana
Arizona	Proposition 200	Policies to combat illegal immigration
Arkansas	Amendment 3	Ban gay marriage
California	Proposition 71	\$3 billion bond issue for stem cell research
Colorado	Amendment 37	Require more renewable energy
Florida	Amendment 4	Gaming in Broward and Miami-Dade counties
Georgia	Amendment 1	Ban gay marriage
Hawaii	Amendment 3*	Confidentiality of communication between crime victim and doctor
Indiana	Public Question 1*	Allow General Assembly to exempt certain property from property taxes
Kentucky	Amendment 1*	Ban gay marriage
Louisiana	Amendment 4	Support for farming and fishing industries
Maine	Question 2	Ban bear hunting with bait, traps or dogs
Michigan	State Proposal 04-1	Require state and local approval for new gambling facilities
Mississippi	Amendment 1	Ban gay marriage
Missouri	Amendment 3	Allocation of fuel taxes
Montana	Initiative 147	Allow cyanide in mining
Nebraska	Measure 417	Initiative can allow new casinos
Nevada	State Question 2	Require per-pupil spending to meet or exceed national average
New Hampshire	Amendment Question	Clarify legislative and court powers
New Mexico	Bond Question C*	\$16.3 million bond for libraries
North Carolina	Amendment 1*	Bonds for local development
North Dakota	Amendment 1	Ban gay marriage
Ohio	Issue 1	Bay gay marriage
Oklahoma	State Question 707*	Local government bond payments
Oregon	State Measure 35	Limit pain and suffering awards in medical malpractice suits
Rhode Island	State Question 9*	\$14 million bond for library at URI
South Carolina	Amendment 1*	End requirement that alcohol be sold in mini-bottles
South Dakota	Amendment B*	State food and transportation funding to religious schools
Utah	Amendment 3*	Ban gay marriage
Virginia	Amendment 1*	Redistricting only done every 10 years
Washington	Referendum Measure 55	Repeal law creating charter schools
West Virginia	Amendment 1*	\$8 million bond for veterans
Wyoming	Amendment C*	Alternative dispute resolution before suit filed against health care provider

* Proposed by legislature

Appendix B

State	Measure	Newspaper	Search Strategy
Alabama	Amendment 2	<i>Birmingham News</i>	amendment 2 or Alabama constitution
Alaska	Measure Number 2	<i>Anchorage Daily News</i>	ballot measure 2 or legalize marijuana
Arizona	Proposition 200	<i>Arizona Republic</i>	proposition 200 or illegal immigration
Arkansas	Amendment 3	<i>Arkansas Democrat-Gazette</i>	Amendment 3 or gay marriage
California	Proposition 71	<i>San Francisco Chronicle</i>	proposition 71 or stem cell research
Colorado	Amendment 37	<i>Denver Post</i>	amendment 37 or renewable energy
Florida	Amendment 4	<i>Miami Herald</i>	amendment 4 or slot machines
Georgia	Amendment 1	<i>Atlanta Journal-Constitution</i>	amendment 1 or gay marriage
Hawaii	Amendment 3	<i>Honolulu Advertiser</i>	amendment 3 or crime victim
Indiana	Public Question 1	<i>Indianapolis Star</i>	question 1 and election or property tax
Kentucky	Amendment 1	<i>Louisville Courier-Journal</i>	amendment 1 or gay marriage
Louisiana	Amendment 4	<i>New Orleans Times-Picayune</i>	amendment 4
Maine	Question 2	<i>Portland Press Herald</i>	question 2
Michigan	State Proposal 04-1	<i>Detroit Free Press</i>	proposal 04-1 or gambling
Mississippi	Amendment 1	<i>Jackson Clarion-Ledger</i>	amendment 1 or gay marriage
Missouri	Amendment 3	<i>St. Louis Post-Dispatch</i>	amendment 3
Montana	Initiative 147	<i>Billings Gazette</i>	headline search for mining, cyanide, I-147
Nebraska	Measure 417	<i>Omaha World-Herald</i>	Measure 417 and casinos
Nevada	State Question 2	<i>LV Review Journal</i>	Question 2 or school spending or national average
New Hampshire	Amendment Question	<i>Manchester Union Leader</i>	Constitutional Amendment Question or court practices or separation of power
New Mexico	Bond Question C	<i>Albuquerque Journal</i>	Bond Question C or librar(ies)
North Carolina	Amendment 1	<i>Charlotte Observer</i>	Amendment One or community development or economic development
North Dakota	Amendment 1	<i>Fargo Forum</i>	Amendment One, Amendment 1, ban gay marriage
Ohio	Issue 1	<i>Cleveland Plain Dealer</i>	Issue 1 or ban gay marriage

Appendix B (continued)

State	Measure	Newspaper	Search Strategy
Oklahoma	State Question 707	<i>The Daily Oklahoman</i>	SQ 707 or TIF or tax increment financing
Oregon	State Measure 35	<i>The Oregonian</i>	Measure 35 or medical malpractice
Rhode Island	State Question 9	<i>The Providence Journal</i>	Question 9 or bond for library (searched projo.com)
South Carolina	Amendment 1	<i>The State</i>	Amendment 1 or Amendment One or mini-bottles
South Dakota	Amendment B	<i>Sioux Falls Argus Leader</i>	Amendment B or funds for religious schools
Utah	Amendment 3	<i>Deseret Morning News</i>	Amendment 3 or ban gay marriage
Virginia	Amendment 1	<i>Norfolk Virginian Pilot</i>	Amendment 1 or Redistricting or Apportionment
Washington	Referendum Measure 55	<i>Seattle Times</i>	Referendum 55 or Repeal charter schools/ Referendum 55 or charter schools
West Virginia	Amendment 1	<i>The Charleston Gazette</i>	Amendment 1 or bonuses and death benefits or veterans
Wyoming	Amendment C	<i>Casper Star Tribune</i>	"medical review" or lawsuit or "Amendment C"

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Table 1
Multivariate Analyses of Residual Votes in the 2004 Elections

Explanatory Variable	Model 1		Model 2	
	Residual Vote for President		Residual Vote for Ballot Issue	
	Coefficient	Standard error	Coefficient	Standard error
<i>Ballot Features</i>				
Straight-party option	-.14*	.07	2.73***	.53
Connect-the-arrow format	.30**	.10	1.00	.92
“None of the Above” option (Nevada)	-.40**	.12	----	----
Write-in votes counted	-.32***	.08	----	----
<i>Voting Technology</i>				
Votomatic punch card	.21*	.11	.47	.64
Datavote punch card	-.74***	.19	-1.14*	.69
Lever machine	-.76***	.18	21.71***	1.79
Hand-counted paper ballot	-.26	.19	2.83**	.99
Full-face DRE	-.25*	.15	3.19***	.84
Touch-screen DRE	-.80***	.14	-1.62***	.40
Optical scan precinct-count	-.91***	.09	.25	.38
Mixed voting system	-.22	.17	-2.61*	1.55
<i>Campaign Context</i>				
Presidential battleground state	-.32**	.07	----	----
Issue salience (words in thousands)	----	----	-.06**	.02
Legislative proposal	----	----	5.07***	.74
<i>Demographic Controls</i>				
Percent Black	.010**	.003	.17***	.02
Percent Hispanic	.012**	.004	.09***	.02
Percent 65 or older	.000	.007	.20***	.04
County population (natural log)	-.12***	.03	-.25	.21
Median income (natural log)	-.41*	.19	.31	1.26
Constant	7.35***	2.02	1.74	12.33
Number of Cases	1999		1999	
R ²	.24		.62	
Root MSE	.99		4.94	

The dependent variable is the percentage of ballots cast that failed to record a valid vote for the contest. Cell entries are regression coefficients and robust standard errors. Observations (counties) are weighted by the number of ballots cast in the 2004 election.

*** p < .001, ** p < .01, * p < .1, two-tailed

Figure 1

