

**Unrecorded Votes and Political Representation**

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Through the controversy involving the 2000 presidential election and the Florida recount, many learned of the difficulties voters may face in casting a valid ballot. Roughly 2 million voters (almost one in every fifty to cast a ballot) failed to record a valid choice for president in the 2000 elections.<sup>1</sup> These were the result of “undervotes” (where voters make no selection) and “overvotes” (where too many selections are recorded). For example, the confusing “butterfly” ballot in Palm Beach County, Florida (in which candidates were listed on two facing pages) generated unusually high levels of invalidated ballots (mostly overvotes) and votes for Pat Buchanan, mostly from citizens intending to vote for Al Gore.<sup>2</sup> In Florida, where George W. Bush’s official margin of victory over Al Gore was a mere 537 votes, over 175,000 ballots failed to record a vote for president. Not surprisingly, the handling of unrecorded votes was at the center of the legal and political disputes surrounding the Florida recount. In at least five other states (Iowa, New Hampshire, New Mexico, Oregon, and Wisconsin), the number of unrecorded votes was larger than the vote margin between Bush and Gore. Thus, it is possible that the election results in some states (and the winner of the presidential election) could have been different if unrecorded votes had been cast properly and counted as intended.

How did this problem occur, and what can be done to minimize the number of unrecorded votes in future elections? We examine election results in 2,895 counties across the United States and in over 5,600 Florida precincts to examine the likely causes of unrecorded votes in the 2000 election. We identify changes in election administration that may reduce the number of unrecorded votes in future elections.

In the wake of the 2000 election controversy, several blue-ribbon commissions, government investigators, and academic panels have proposed election reforms designed to reduce the number unrecorded votes.<sup>3</sup> In 2002, Congress passed, and President Bush signed into law, the Help America Vote Act, which mandates some election reforms and authorizes almost \$4 billion in federal grants for improvements in election administration. Finally, state legislatures are considering several changes in election administration in response to the recent federal legislation and the difficulties presented by the 2000 election. Many of the reform proposals focus heavily on voting equipment (especially the replacement of punch card voting machines). As in other studies, we also find that voting technology, as well as demographic characteristics, influences the frequency of unrecorded votes in the 2000 election. However, election laws and administrative decisions that determine ballot design and the options available on the ballot strongly influence the number of unrecorded votes in the 2000 presidential election. In many cases, other election administration rules or features (such as ballot design, the availability of straight-party voting, and laws regarding write-in votes) have a greater effect on unrecorded votes and are less expensive to change than voting technology. By focusing so much attention on voting technology, the election reform movement may be missing other cost-effective methods to reduce the number of unrecorded votes in future elections.

### **Why are There Unrecorded Votes?**

Since elections are administered at the county level (where decisions about voting methods are often made) in most states, we start by examining unrecorded votes in American counties. We collected data on the number of ballots cast, the presidential vote totals, voting technology, ballot features, and demographic characteristics for 2895 counties in the 2000 election. While this sample covers 92% of all counties and 95% of votes cast for president in the 2000 election, we could not get complete data for every county.<sup>4</sup> Not all states require election officials to count or report the number of unrecorded votes or the total number of ballots cast in an election. In addition, a few jurisdictions reported erroneous totals (as when the number of presidential votes exceeds the number of ballots cast). Thus, a basic element of any election reform law should require election administrators to report the number of overvotes, undervotes, and total ballots cast, in addition to the vote totals for each candidate.

We simply compute the difference between the number of ballots cast and the number of votes cast for president to calculate the percentage of unrecorded votes in each county. Among the counties in our sample, 1,853,267 unrecorded votes were cast in the presidential contest (1.8% of ballots cast). The distribution of unrecorded presidential votes across counties is heavily skewed. Most counties have relatively low rates of unrecorded votes, but some counties have high rates of unrecorded votes. The percentage of unrecorded votes ranges from .02% to 15.0%, with a median of 1.7%, a mean of 2.3%, and a standard deviation of 1.9%. In one out of every four counties, more than 3% of the ballots failed to record a vote for president. The next section examines why unrecorded votes were more common in some counties than in others.

## **Ballot Layout and Options Can Produce Unrecorded Votes**

There is some concern that voter confusion may cause unrecorded votes. Voters may fail to select a candidate or make too many selections when they are confused by voting technology, ballot instructions, or ballot design. In addition, it is an axiom of politics that many voters are ill informed about the full range of candidates and issues that confront them on a ballot. Consequently, voters use an array of decision-making shortcuts to simplify the voting process.<sup>5</sup> Party affiliation may be the strongest voting aid, and ballot designs that accentuate partisanship tend to produce lower rates of unrecorded votes.<sup>6</sup> For example, in the 2000 election, only 15 states included a straight-party voting option on the ballot. The straight-party option, which typically appears at the top of the ballot with each party's name and logo, allows people to cast a vote for the same party in every contest on the ballot. Thus, it makes party affiliation more salient and affords the voter a very simple and almost error-free method of completing the ballot.

Our analysis reveals that the straight-party ballot device reduces the number of unrecorded votes. Table 1 indicates the frequency of unrecorded votes in the 2000 presidential election as a percentage of all ballots cast. In states with a straight-party option on the ballot, 1.3% of the ballots cast failed to record a vote for president. In states without straight-party voting, 2.0% of ballots failed to record a vote for president, roughly a 50% increase.<sup>7</sup> While these numbers may seem small, this is a substantial difference. In a national electorate of roughly 100 million voters, a one percent increase means an additional 1 million unrecorded votes. Unrecorded votes would be less common if other states adopted the straight-party voting option. In addition, this

evidence is consistent with other studies showing that unrecorded votes are less common when the ballot design minimizes voter confusion.<sup>8</sup>

[Table 1 about here]

### **Some Unrecorded Votes are Probably Intentional**

The straight-party option is not the only ballot characteristic that influences unrecorded votes. It may be that some voters intentionally leave the ballot blank if they do not like any of the listed candidates. As Table 1 indicates, there was a substantially higher rate of unrecorded votes in the seven states where Ralph Nader was left off the ballot.<sup>9</sup> This suggests that voters who preferred Nader may have abstained from the presidential contest if his name was not on the ballot.

Of course, a write-in vote is an alternative for voters who want to register disapproval of the available choices on the ballot. As it turns out, however, many states severely limit write-in voting. Ten states simply did not include space on the ballot for write-in votes in the 2000 presidential election. Another 25 states allowed write-in votes but only counted write-ins cast for candidates who had filed a declaration of candidacy (which very few write-in candidates bother to do). Thus, some voters cast write-ins for president that were not counted as valid votes. For example, Arizona is one of the states that only counted write-in votes for candidates who filed the required paperwork. If all write-in votes in Maricopa County, Arizona (which includes Phoenix) were counted as valid votes, the number of unrecorded votes would have been 1.4% instead of 1.7% indicated by official records. Only 14 states allow and count all write-in votes for

president. Finally, Nevada deserves mention as the only state to include a ballot line for “None of These Candidates” in federal and statewide races, certainly a more conspicuous outlet for a protest vote than the write-in option. In fact, “None of These Candidates” received over 3,000 votes for president in 2000, more votes than three of the candidates listed on the ballot in Nevada.

As the bottom panel in Table 1 shows, unrecorded votes are roughly twice as common in states that restrict write-in votes (by not allowing write-ins or only counting write-in votes for qualified candidates). In addition, Nevada had an extremely low rate of unrecorded votes (one of the lowest in the country). This suggests that some of the unrecorded votes in the 2000 presidential election would have been write-in selections rather than votes for any of the candidates listed on the ballot. Other states interested in reducing the number of unrecorded votes may want to follow Nevada’s lead or loosen restrictions on write-in voting.

### **Requiem for Votomatic Punch Card Machines**

We also examine voting machines to see whether particular technologies are associated with higher rates of unrecorded votes. Voting methods vary around the country. There are six basic methods of voting in the United States: paper ballots, lever machines, Votomatic punch card machines, Datavote punch cards, optical scan ballots, and direct recording electronic (DRE) machines. Electronic machines and optical scan systems are the newest technologies, seeing increased use as jurisdictions replace older methods (paper ballots, lever machines, and punch cards). Optical scan systems can also

be divided into those 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 possible mistakes (overvotes and undervotes). The central-count optical scan systems do not have such an error-correction feature. Finally, a small number of counties (almost entirely in states where elections are administered by townships) used more than type of voting technology in the 2000 general election.

[Table 2 about here]

Table 2 provides summary data on the prevalence of each type of voting technology, a short description of the technology, and corresponding rates of unrecorded votes in the 2000 election. Votomatic punch cards and optical scan systems are by far the most commonly used voting technologies, while paper ballots and Datavote punch cards are the least common voting methods. As several studies have found, Table 2 shows that Votomatic punch card machines (source of the infamous “hanging chad”) produce substantially higher rates of unrecorded votes than any other system.<sup>10</sup> After the Votomatic, however, differences between most other voting methods in terms of unrecorded votes are not as large. In comparing newer technologies, precinct-based optical scan systems (0.9% unrecorded votes) performed better than central-count optical scan systems (1.8% unrecorded votes) and electronic machines (1.7%).<sup>11</sup> Among the newer voting methods, only the precinct-based optical scan system performed significantly better than lever machines and paper ballots.

It is worth noting the performance of Datavote punch cards, which often are lumped with their distant cousin, Votomatic machines. In Votomatic machines, the voter



must insert a punch card ballot into a device that holds a booklet listing the offices and candidates. In contrast, the Datavote method is arguably less confusing because the candidates are listed directly on the punch card ballot (thus removing the step of aligning the punch card with the ballot booklet). As Table 2 indicates, Datavote machines performed better, on average, than Votomatic punch cards and just about as well as any other method. Thus, if the overall frequency of unrecorded votes is the main concern of election administrators, counties using lever machines, paper ballots, or Datavote punch cards may not need to rush to buy new voting equipment unless they can afford a precinct-count optical scan system.

### **The Demographic Basis of Unrecorded Votes**

We also examine several demographic factors related to unrecorded votes. Several studies indicate that unrecorded votes are partly a function of socio-economic characteristics. Unrecorded votes are more common in counties or precincts with large populations of racial and ethnic minorities, low-income residents, less-educated citizens, or elderly voters.<sup>12</sup> It may be that each of these groups faces a higher degree of confusion during the voting process (due to language difficulties, low levels of education, or disabilities, for example). Alternatively, many of these groups may be alienated from the political process and thus less interested in many of the contests on the ballot.

[Table 3 about here]

Table 3 breaks down the rate of unrecorded votes by the racial and ethnic composition of American counties. As many studies have found, it is evident that the

frequency of unrecorded votes in the 2000 presidential election is related to the size of the African-American population. Counties with larger concentrations of black voters tend to have higher rates of unrecorded votes. In contrast, the effect of ethnicity is weaker, although counties with larger concentrations of Hispanic voters tend to have slightly higher rates of unrecorded votes.

[Table 4 about here]

We also examine the frequency of unrecorded votes by income and population (see Table 4). Here we see that higher rates of unrecorded votes tend to occur in low-income counties and small counties. In contrast, large and wealthy counties tend to have relatively low levels of unrecorded votes. The findings with respect to income, race and ethnicity indicate a socio-economic disparity in unrecorded votes, suggesting that unrecorded votes are disproportionately cast by low-income and minority voters. It is not entirely clear why unrecorded votes are more common in small counties. Part of the explanation is that income levels are correlated with county size – small counties tend to have low median incomes and large counties tend to have high median income levels. It is also possible that larger urban counties have a more professional government apparatus (including election administration) than smaller rural counties, thus reducing voting errors.

It remains to be seen whether the effects of the demographic measures are the result of intentional undervoting by disaffected groups or the result of greater voter confusion and unintentional errors among disadvantaged groups. Some studies indicate that the elevated rate of unrecorded votes associated with confusing ballots and voting technology (such as Votomatic punch cards) falls disproportionately on racial and ethnic

minorities and the poor.<sup>13</sup> Thus, it appears that disadvantaged groups are more confused by certain voting methods, which is responsible for much of the socio-economic differences in unrecorded votes.

We find similar evidence in the 2000 presidential election. In particular, there is reason to believe that lever machines and electronic machines reduce the racial and economic disparity in unrecorded votes because they have features that reduce voting errors. First, both machines prevent overvoting – they do not allow voters to cast votes for more than one candidate. Second, lever machines and especially electronic machines conspicuously indicate to voters when they have not selected any candidate (or undervoted). Third, lever and electronic machines allow voters to correct mistakes without having to get a new ballot from poll workers.<sup>14</sup> Other voting methods (including optical scan ballots, which have quickly become the most popular in the country) do not have these same features.

[Table 5 about here]

Table 5 presents the rate of unrecorded votes by race and income for the most common voting methods used in the United States. The first two columns of the table show that the apparent racial disparity in unrecorded votes is clearly evident in counties that used Votomatic machines and central-count optical scan ballots in the 2000 election. The percentage of unrecorded votes in counties with relatively large African-American populations is substantially higher than in counties with relatively few African-Americans. However, apparent racial differences in unrecorded votes are much smaller in counties using lever machines and precinct-count optical scan systems, and vanish altogether in counties using electronic machines. In addition, Table 5 suggests that the

economic distribution of unrecorded votes is more equitable in counties using precinct-count optical scan systems and electronic voting machines. While low-income counties still have a higher rate of unrecorded votes than high-income counties, the gap between rich and poor counties is substantially smaller where electronic voting machines and precinct-count optical scan systems are used. Because of the disparate impact of the different voting technologies, some may prefer electronic voting machines or precinct-count methods to central-count optical scan systems when choosing new voting equipment.

[Table 6 about here]

The straight-party voting option is another mechanism that helps voters avoid confusion and mistakes. Thus, the racial and economic disparity in unrecorded votes may be confined to those states that do not have a straight-party option on the ballot. Table 6 provides some evidence to support this belief. In states without straight-party voting, we see a familiar pattern in that unrecorded votes are more common in counties with relatively large concentrations of black voters. However, in states with straight-party voting, there is no apparent racial disparity in unrecorded votes. Similarly, the discrepancy in unrecorded votes between rich and poor counties is much smaller in states with a straight-party voting option on the ballot.

Thus, national data indicate that changes in voting technology (replacing Votomatic punch card voting machines) and ballot design (including straight-party and write-in options) would reduce unrecorded votes. While the national data give an indication of the sources of unrecorded votes, the main controversy over uncounted

ballots focused on the state of Florida. Did the same factors produce unrecorded votes in Florida? For the most part, they did.

## What Happened in Florida?

The 2000 presidential election in Florida produced a “perfect storm” in terms of unrecorded votes. The state’s demographic and election administration features suggest a high rate of unrecorded votes compared to other states. For example, Florida ranks above the national average in its population of low-income residents, non-white residents, and elderly citizens, all factors associated with higher levels of unrecorded votes. At the same time, Florida does not have a straight-party option on the ballot and it only counts write-in votes for declared candidates. Furthermore, the largest counties in Florida used Votomatic punch cards in the 2000 election. To top it all off, ten presidential candidates qualified for the Florida ballot in 2000, prompting several counties to list presidential candidates in multiple columns or pages. This created further confusion for voters. The combination of all of these forces produced over 175,000 unrecorded votes for president (roughly 2.9% of ballots cast in Florida), one of the highest rates in the country. Throw in an extremely close presidential election that hinged on a razor-thin margin of victory in Florida, and the result was an explosive controversy over unrecorded votes.

We examine a database of unrecorded votes in the 2000 presidential election (including overvotes and undervotes) from each Florida voting precinct (gathered by a consortium of newspapers and provided by *USA Today*).<sup>15</sup> Most of the unrecorded votes for president in Florida (roughly 65 percent) were overvotes, a much higher share of overvotes than in other states that reported such data. This suggests that voter confusion was a more important factor in the Florida election. As in our county analysis, we find that punch card voting machines are a source of unrecorded votes in Florida. Twenty-

four Florida counties (including the state's most populated counties) used punch card machines in the 2000 general election (almost all of the other counties used optical scan ballots). As expected, unrecorded votes were more common in counties using punch cards.

However, ballot design was the most critical source of unrecorded votes in Florida.<sup>16</sup> Because of a change in state law that eased ballot access requirements for minor parties, ten presidential candidates qualified for the ballot in Florida. As election officials will attest, fitting ten candidates on the same column or page of a ballot is not always an easy task. Nineteen counties in Florida listed the presidential candidates in more than one column. For example, the “butterfly” ballot in Palm Beach County listed the candidates on two facing pages. In Duval County, the presidential candidates were listed on two non-facing pages. In other counties, candidates were listed in more than one column on the same page. If voters mistakenly thought that each new column represented a new contest, they may have overvoted by selecting a candidate from each column.

[Table 7 about here]

Table 7 shows the consequences of what may seem like a mundane decision about the way presidential candidates are listed on the ballot. In counties where candidates were listed in one column, 2.1% of the ballots contained unrecorded votes for president. In counties where candidates were listed in more than one column, unrecorded votes for president jumped to 7.6% of ballots cast. In addition, overvotes were much more common in counties with the confusing ballot design, while undervotes were relatively uncommon regardless of the ballot design. These figures support a theory that listing

candidates in multiple columns increased the likelihood of inadvertent mistakes by voters.

As in the national data, we also find an interaction between ballot design and race and income. In Florida counties with the confusing presidential ballot design, high rates of overvotes and unrecorded votes were concentrated in precincts with large black or low-income populations. As Table 8 indicates, in counties that adopted the confusing ballot design, well over one of every ten voters in heavily poor or black precincts mistakenly voted for more than one presidential candidate. In contrast, in counties that listed presidential candidates in a single column, overvotes remained below 4% even in precincts with the largest populations of poor or black residents.

[Table 8 about here]

These results raise concerns about unequal treatment and representation of voters in American elections, especially in light of the “equal protection” rationale used by the Supreme Court to decide the 2000 presidential election in the *Bush v. Gore* case.<sup>17</sup> In fact, the American Civil Liberties Union relied heavily on an equal protection claim when it filed lawsuits in several states to replace punch card voting machines. There is some debate as to whether the racial and economic disparity in unrecorded votes indicates discrimination against minority and low-income voters.<sup>18</sup> Politically speaking, Democrats should be more concerned than Republicans about ensuring the valid votes of poor and minority voters, and that is the way recent debates about election administration and reform have often played out. The jury is still out, however, on the charge of voter discrimination. On the one hand, it does not appear that older voting methods (particularly punch cards) are targeted to counties with large minority or low-income



populations.<sup>19</sup> The cumbersome administrative process of replacing voting technology would make that difficult. In addition, most of the Florida counties that adopted the confusing presidential ballot design had Democratic election supervisors.

On the other hand, there is a long history of partisan manipulation of the straight-party line on the ballot. For example, Republican-controlled legislatures in Michigan and Illinois recently voted to eliminate the straight-party option from state ballots over the unified objections of Democratic lawmakers. In both cases, the impact of the change on minority voters was a major point of contention.<sup>20</sup> Regardless of the largely partisan debate about voter discrimination, however, improved voter education efforts (especially in areas with concentrated low-income and minority residents) are worth pursuing to reduce the number of unrecorded votes in future elections.

### **Conclusion**

An analysis of the 2000 presidential election results nationwide and in Florida indicate that ballot design and voting methods influence the frequency as well as the racial and economic distribution of unrecorded votes. While voters probably intend some unrecorded votes, it is clear that many unrecorded votes are the product of confusion and mistakes by voters.

In the wake of the 2000 elections, many counties are considering new voting technology, and there is intense competition between manufacturers of electronic voting machines and optical scan systems to replace older voting methods. In some quarters, optical scan voting methods are touted as the best available equipment in terms of minimizing the number of unrecorded votes.<sup>21</sup> This recommendation may need to be

qualified, particularly since the central-count optical scan systems appear to perform no better than any alternatives to punch cards. If one is interested in reducing the disproportionate racial and economic impact of unrecorded votes, our evidence suggests that precinct-count optical scan systems and electronic voting machines perform better than central-count optical scan methods. At a minimum, the evaluation of different voting technologies merits closer analysis, especially an experimental study to see how voters interact with each voting method.

The 2002 elections are likely to reinforce the belief that new voting technology will reduce the number of unrecorded votes cast in major elections. In Florida, all counties were forced to use electronic voting machines or precinct-count optical scan systems in time for the 2002 elections. While these changes did not prevent widespread voting difficulties in the Florida primary election in September of 2002, they did reduce the number of unrecorded votes in subsequent elections.<sup>22</sup> Only 0.8% of ballots cast in Florida's gubernatorial election of 2002 failed to record a valid vote, a significant decline from the 2000 presidential election in Florida. In Georgia, the entire state upgraded to electronic touch-screen voting machines for the 2002 general election. Only 1.0% of ballots cast in Georgia's gubernatorial election of 2002 failed to record a valid vote, a dramatic drop from 3.5% unrecorded votes in the 2000 presidential election in Georgia. In addition, Georgia avoided many of the Election Day difficulties that plagued Florida's 2002 primary election. This was likely due to a massive effort to educate voters and train election workers on the new voting machines. Georgia election officials toured the state demonstrating the new voting equipment, and election judges were required to complete

12 hours of training before the 2002 election (far more than is typically required in other states).

However, it is important to keep these improvements in perspective. Voter turnout was much lower in the midterm elections of 2002, which usually means less stress for election judges. In addition, the midterm electorate tends to be dominated by committed partisans who are less likely to make voting errors. Furthermore, the gubernatorial elections in Florida and Georgia featured only three candidates, thus limiting the ballot design problems seen in the 2000 presidential contest. Finally, election improvements in Florida and Georgia came after significant expenditures on election administration. For example, the new touch-screen voting machines cost the state of Georgia \$54 million.<sup>23</sup> While appropriations arising from the recent federal election reform law will help state and local governments pay for election improvements, in the current economic downturn many states may not be able to afford the changes made in Georgia and Florida.

In the march to election reform it is important to also look beyond voting technology. Switching to a new voting technology can be very costly, while relatively inexpensive changes in ballot design may have a bigger effect in reducing the number of unrecorded votes in future elections. Adding ballot lines (such as the straight-party and write-in options) that help voters complete an error-free ballot and avoiding designs that create confusion (like listing candidates for the same office in multiple columns or pages) may go a long way toward minimizing the number of unrecorded votes, at least in high-profile contests that appear near the top of the ballot.

**Table 1**  
**Unrecorded Votes in the 2000 Presidential Election by Ballot Format**

Ballot Format	Unrecorded Votes
Straight-party punch (15 states, 1011 counties, 28% of ballots)	1.3%
No straight-party punch (35 states, 1884 counties, 72% of ballots)	2.0%
Nader on the ballot (43 states, 2346 counties, 90% of ballots)	1.7%
Nader not on the ballot (7 states, 549 counties, 10% of ballots)	2.8%
Write-ins not allowed (10 states, 551 counties, 9% of ballots)	2.0%
Write-ins counted only for declared candidates (25 states, 1691 counties, 67% of ballots)	2.0%
All write-ins counted (14 states, 636 counties, 23% of ballots)	1.1%
“None of These Candidates” ballot option (Nevada only, 17 counties, 1% of ballots)	0.6%

**Table 2**  
**Unrecorded Votes in the 2000 Presidential Election by Voting Technology**

Voting Technology	Description	Unrecorded Votes
Punch Card – Votomatic (507 counties, 29% of ballots)	Punch card is inserted behind booklet with ballot choices – voter uses stylus to punch out holes in card. Ballots counted by card reader machine.	2.8%
Paper Ballot (221 counties, 1% of ballots)	Candidates are listed on a sheet of paper – voter marks box next to chosen candidate. Ballots counted by hand.	1.9%
Optical Scan – Central Count (857 counties, 15% of ballots)	Voter darkens an oval or arrow next to chosen candidate on paper ballot. Ballots counted by computer scanner at a central location.	1.8%
Electronic (DRE) (312 counties, 12% of ballots)	No ballot. Candidates are listed on a computerized screen – voter pushes button or touches screen next to chosen candidate. DRE machine records and counts votes.	1.7%
Lever Machine (370 counties, 15% of ballots)	No ballot. Candidates are listed next to levers on a machine – voter pulls down the lever next to chosen candidate. Lever machine records and counts votes.	1.6%
Punch Card – Datavote (44 counties, 3% of ballots)	Ballot choices are printed on punch card – voter punches out hole next to chosen candidate. Ballots counted by card reader machine.	1.2%
Mixed (71 counties, 4% of ballots)	More than one voting method used.	1.1%
Optical Scan – Precinct Count (513 counties, 23% of ballots)	Voter darkens an oval or arrow next to chosen candidate on paper ballot. Ballots counted by computer scanner at the precinct, allowing voter to identify and fix mistakes.	0.9%

**Table 3**  
**Unrecorded Votes in the 2000 Presidential Election by Race and Ethnicity**

Racial composition of county	Unrecorded Votes
Less than 10% black (2160 counties, 61% of ballots)	1.5%
Between 10% and 30% black (424 counties, 29% of ballots)	2.0%
Over 30% black (311 counties, 10% of ballots)	3.1%
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Ethnic composition of county	
Less than 10% Hispanic (2515 counties, 66% of ballots)	1.7%
Between 10% and 30% Hispanic (260 counties, 24% of ballots)	2.0%
Over 30% Hispanic (120 counties, 10% of ballots)	2.1%

**Table 4**  
**Unrecorded Votes in the 2000 Presidential Election by Income and Ballots Cast**

Median Income	Unrecorded Votes
Less than \$25,000 (359 counties, 3% of ballots)	3.4%
Between \$25,000 and \$32,499 (1226 counties, 18% of ballots)	2.2%
Between \$32,500 and \$40,000 (865 counties, 38% of ballots)	2.1%
Over \$40,000 (445 counties, 41% of ballots)	1.2%
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Ballots Cast	
Less than 5,000 ballots (758 counties, 2% of ballots)	2.7%
Between 5,000 and 9,999 ballots (696 counties, 5% of ballots)	2.6%
Between 10,000 and 50,000 ballots (1040 counties, 22% of ballots)	1.9%
Over 50,000 ballots (401 counties, 71% of ballots)	1.7%

**Table 11.3**  
**Racial and Economic Disparity in Unrecorded Votes by Voting Technology**

Racial composition of county	Unrecorded votes in counties using:				
	Votomatic punch cards	Optical scan - central	Optical scan - precinct	Lever machines	Electronic machines
Less than 10% black	2.2%	1.3%	0.9%	1.1%	1.7%
Between 10% and 30% black	3.1%	2.3%	0.7%	1.7%	1.7%
Over 30% black	5.6%	5.2%	1.9%	2.3%	1.7%
<b>Median Income</b>					
Less than \$25,000	4.5%	4.4%	1.1%	3.4%	2.7%
Between \$25,000 and \$32,499	3.2%	2.1%	1.3%	2.0%	2.2%
Between \$32,500 and \$40,000	3.0%	1.7%	1.0%	1.7%	1.7%
Over \$40,000	2.2%	1.0%	0.8%	1.1%	1.3%

**Table 11.4**  
**Effect of Straight-Party Voting on Unrecorded Votes**

Composition of County By Race	Unrecorded votes in states with:	
	No straight-party voting	Straight-party voting
Less than 10% black	1.5%	1.4%
Between 10% and 30% black	2.3%	1.1%
Over 30% black	3.7%	1.3%
<b>By Median Income</b>		
Less than \$25,000	4.4%	2.0%
Between \$25,000 and \$32,499	2.7%	1.5%
Between \$32,500 and \$40,000	2.3%	1.4%
Over \$40,000	1.3%	1.1%



**Table 11.5  
Unrecorded Votes in Florida**

Ballot Design	Unrecorded Votes	Overvotes	Undervotes
Straightforward: candidates listed in 1 column (47 counties, 4684 precincts, 83% of ballots)	2.1%	1.2%	0.9%
Confusing: candidates listed in 2 columns (18 counties, 1077 precincts, 17% of ballots)	7.6%	5.9%	1.7%

**Table 11.6  
Racial and Economic Disparity in Unrecorded Votes in Florida**

Composition of Precinct:	<u>Confusing Ballot Design</u>		<u>Straightforward Ballot Design</u>	
	Unrecorded Votes	Overvotes	Unrecorded Votes	Overvotes
<b>By Race</b>				
Less than 10% black	5.9%	4.2%	1.7%	0.9%
Between 10% and 30% black	8.0%	6.5%	2.1%	1.3%
Over 30% black	16.0%	14.3%	5.5%	3.7%
<b>By Poverty (household income under \$15,000)</b>				
Less than 10%	5.8%	3.9%	1.2%	0.6%
Between 10% and 25%	7.7%	6.1%	2.1%	1.2%
Over 25%	13.3%	12.3%	3.9%	2.4%

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<sup>1</sup> In contests farther down the ballot (such as races for Congress, state legislature, or county offices) the number of unrecorded votes is typically even higher. See Charles S. Bullock III and Richard E. Dunn, "Election Roll-off: A Test of Three Explanations," *Urban Affairs Review* 32 (1996): 71-86; Stephen M. Nichols and Gregory A. Strizek, "Electronic Voting Machines and Ballot Roll-Off," *American Politics Quarterly* 23 (1995): 300-318; Caltech/MIT Voting Technology Project, *Voting: What is, What Could be*, July, 2001 (<http://www.vote.caltech.edu/Reports/index.html>).

<sup>2</sup> 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," *American Political Science Review* 95 (2001): 793-810.

<sup>3</sup> Many of the reports can be viewed and downloaded from electionline.org at <http://www.electionline.org/news.jsp?s=reports>.

<sup>4</sup> This represents a more complete data set than other studies of unrecorded votes in the 2000 election. In states where elections are administered by townships rather than counties (Maine, Massachusetts, Michigan, New Hampshire, Vermont, and Wisconsin), we aggregated the vote totals and voting technology data to the county level. In addition, some cities (including the District of Columbia) have separate election administration authorities. We treat such cities in our data as county-equivalents and adjust the figures for the county from which they come. For a more complete description of the data collection, see David C. Kimball, Chris Owens, and Katherine McAndrew, "Who's Afraid of an Undervote?" (paper presented at the annual meeting of the Southern Political Science Association, Atlanta, November 9, 2001).

<sup>5</sup> Samuel L. Popkin, *The Reasoning Voter*, (Chicago: University of Chicago Press, 1991); Arthur Lupia and Mathew D. McCubbins, *The Democratic Dilemma* (New York: Cambridge University Press, 1998).

<sup>6</sup> As another example, nonpartisan contests receive substantially fewer votes than similar partisan contests on the same ballot. See Brian F. Schaffner and Matthew J. Streb, "Partisan Heuristic in Low-Information Elections," *Public Opinion Quarterly* 66 (2002): 559-581; Brian F. Schaffner, Matthew J. Streb, and Gerald Wright, "Teams Without Uniforms: The Nonpartisan Ballot in State and Local Elections," *Political Research Quarterly* 54 (2001): 7-30.

<sup>7</sup> The differences in rates of unrecorded votes presented in Table 1 remain statistically significant in a multivariate analysis that controls for voting technology and several demographic and election administration factors. See Kimball, Owens, and McAndrew, "Who's Afraid of an Undervote?"

<sup>8</sup> Wand et al., "The Butterfly Did it: The Aberrant Vote for Buchanan in Palm Beach County, Florida"; Robert Darcy and Anne Schneider, "Confusing Ballots, Roll-Off, and The Black Vote," *Western Political Quarterly* 42 (1989): 347-364; Dennis Cauchon, "Errors Mostly Tied to Ballots, not Machines," *USA Today* (November 7, 2001), p. 6A.

<sup>9</sup> Nader did not qualify for the ballot in Georgia, Idaho, Indiana, North Carolina, Oklahoma, South Dakota, and Wyoming. These states have some of the toughest ballot access laws (in terms of the number of petition signatures needed) for minor party

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candidates. See Richard Winger, "Nader Wins Illinois, But Loses North Carolina," *Ballot Access News* (September 1, 2000), pp. 1,7.

<sup>10</sup> Herb Asher, Russell Schussler, and Peg Rosenfield, "The Effect of Voting Systems on Voter Participation" (paper presented at the annual meeting of the Midwest Political Science Association, Milwaukee, WI, April, 1982; Peter A. Shocket, Neil R. Heighenberger, and Clyde Brown, "The Effect of Voting Technology on Voting Behavior in a Simulation Multi-Candidate City Council Election: A Political Experiment of Ballot Transparency," *Western Political Quarterly* 45 (1992): 521-537; Roy G. Saltman, *Accuracy, Integrity, and Security in Computerized Vote-Tallying* (Gaithersburg, MD: National Bureau of Standards, 1988); Ronnie Dugger, Ronnie "Annals of Democracy." *New Yorker* (November 7, 1988), pp. 40-108; Caltech/MIT Voting Technology Project, *Voting: What is, What Could be*; Caltech/MIT Voting Technology Project, "Residual Votes Attributable to Technology: An Assessment of the Reliability of Existing Voting Equipment" (March 30, 2001, <http://vote.caltech.edu>); Henry E. Brady, Justin Buchler, Matt Jarvis, and John McNulty, *Counting All The Votes: The Performance of Voting Technology in the United States* (Survey Research Center and Institute of Governmental Studies, University of California, Berkeley, September, 2001, [http://ucdata.berkeley.edu/new\\_web/countingallthevotes.pdf](http://ucdata.berkeley.edu/new_web/countingallthevotes.pdf)); Minority Staff, Special Investigations Division, Committee on Government Reform, U.S. House of Representatives, "Income and Racial Disparities in the Undercount in the 2000 Presidential Election" (July 9, 2001: [http://www.house.gov/reform/min/pdfs/pdf\\_inves/pdf\\_elec\\_nat\\_study.pdf](http://www.house.gov/reform/min/pdfs/pdf_inves/pdf_elec_nat_study.pdf)); United States General Accounting Office, *Elections: Statistical Analysis of Factors That Affected Uncounted Votes in the 2000 Presidential Election* (GAO-02-122, October, 2001, <http://www.gao.gov/>).

<sup>11</sup> Several counties with precinct-count optical scan systems did not use the feature that alerts voters if they have made an error. We coded these counties as being equivalent to central-count systems. See Michael Tomz and Robert P. Van Houweling, "How Does Voting Equipment Affect the Racial Gap in Voided Ballots?" (unpublished manuscript, Stanford University, January 2002); Minority Staff, Special Investigations Division, Committee on Government Reform, U.S. House of Representatives, "Income and Racial Disparities in the Undercount in the 2000 Presidential Election"; United States General Accounting Office, *Elections: Statistical Analysis of Factors That Affected Uncounted Votes in the 2000 Presidential Election*.

<sup>12</sup> Jack L. Walker, "Ballot Forms and Voter Fatigue: An Analysis of the Office Block and Party Column Ballots," *Midwest Journal of Political Science* 10 (1966): 448-464; James M. Vanderleeuw and Richard Engstrom, "Race, Referendums, and Roll-Off," *Journal of Politics* 49 (1987): 1081-1092; Darcy and Schneider, "Confusing Ballots, Roll-Off, and the Black Vote"; Bullock and Dunn, "Election Roll-off: A Test of Three Theories"; Nichols and Strizek, "Electronic Voting Machines and Ballot Roll-Off"; Stephen M. Nichols, "State Referendum Voting, Ballot Roll-off, and the Effect of New Electoral Technology," *State and Local Government Review* 30 (1998):106-117; David C. Kimball and Chris T. Owens, "Where's the Party? Eliminating One-Punch Voting" (paper presented at the annual meeting of the Midwest Political Science Association, April 29, 2000); Brady et al. *Counting All The Votes: The Performance of Voting Technology in*

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*the United States*; United States General Accounting Office, *Elections: Statistical Analysis of Factors That Affected Uncounted Votes in the 2000 Presidential Election*; Michael C. Herron and Jasjeet S. Sekhon, "Overvoting and Representation: An Examination of Overvoted Presidential Ballots in Broward and Miami-Dade Counties" *Electoral Studies*, forthcoming; Stephen Knack and Martha Kropf, "Invalidated Ballots in the 1996 Presidential Election: A County-Level Analysis" *Journal of Politics*, forthcoming.

<sup>13</sup> Darcy and Schneider, "Confusing Ballots, Roll-Off, and The Black Vote"; Knack and Kropf, "Invalidated Ballots in the 1996 Presidential Election: A County-Level Analysis"; Tomz and Van Houweling, "How Does Voting Equipment Affect the Racial Gap in Voided Ballots?" Bruce E. Hansen, "A Precinct-Level Demographic Analysis of Double-Punching in the Palm Beach Presidential Vote" (unpublished manuscript, University of Wisconsin, November 12, 2000, <http://www.ssc.wisc.edu/~bhansen/vote/florida2.pdf>).

<sup>14</sup> For a more detailed comparison of voting methods, see Tomz and Van Houweling, "How Does Voting Equipment Affect the Racial Gap in Voided Ballots?" p. 2-8.

<sup>15</sup> We downloaded the Florida precinct data November 7, 2001, from <http://www.usatoday.com/news/politics/nov01/ballots-usat.htm>. The precinct figures compiled by the newspaper consortium did not include data for Glades County, a small county in southern Florida. There also was a disparity between official election results and the newspaper data for Martin County (the newspaper data indicated no unrecorded votes in the county). Thus, we exclude Martin County from our analysis.

<sup>16</sup> In a multivariate analysis of unrecorded votes in Florida that controlled for a host of demographic and election administration factors, the 2-column ballot design was the biggest source of unrecorded votes. In addition, the precinct-count optical scan systems did not perform much better than central-count systems. Results are available from the authors. Also see Cauchon, "Errors Mostly Tied to Ballots, not Machines."

<sup>17</sup> For a compilation of the relevant court decisions and discussion of the legal issues in the 2000 presidential election, see Samuel Issacharoff, Pamela S. Karlan, and Richard H. Pildes, *When Elections Go Bad: The Law of Democracy and the Presidential Election of 2000*, (New York: Foundation Press, 2001).

<sup>18</sup> The debate includes many other issues, such as voter registration and voting rights for convicted felons. See United States Commission on Civil Rights, *Voting Irregularities in Florida During the 2000 General Election*. (June, 2001:

<http://www.usccr.gov/vote2000/stdraft1/main.htm>);

Allan J. Lichtman, "Report on the Racial Impact of the Rejection of Ballots Cast in the 2000 Presidential Election in the State of Florida." (June 2001:

<http://www.usccr.gov/vote2000/stdraft1/trpt.htm>); John R. Lott, Jr. "Non-Voted Ballots and Discrimination in Florida" (unpublished manuscript, Yale University, June 25, 2001).

<sup>19</sup> Stephen Knack and Martha Kropf, "Who Uses Inferior Voting Technology?" *Ps: Political Science and Politics* 35 (2002): 541-548.

<sup>20</sup> For other examples, see Darcy and Schneider, "Confusing Ballots, Roll-off, and the Black Vote"; James T. Hamilton and Helen F. Ladd, "Biased Ballots? The Impact of Ballot Structure on North Carolina Elections in 1992," *Public Choice* 87(1996): 259-80.

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<sup>21</sup> Caltech/MIT Voting Technology Project, *Voting: What Is, What Could Be*, pp. 21-22; Caltech/MIT Voting Technology Project, “Residual Votes Attributable to Technology: An Assessment of the Reliability of Existing Voting Equipment”.

<sup>22</sup> Caltech Media Relations, “Caltech-MIT Team Finds 35% Improvement in Florida's Voting Technology,” (September 19, 2002: [http://pr.caltech.edu/media/Press\\_Releases/PR12284.html](http://pr.caltech.edu/media/Press_Releases/PR12284.html)).

<sup>23</sup> Georgia Secretary of State, “Georgia Counts: Frequently Asked Questions,” (2002: <http://www.georgiacounts.com/faqs.htm>).