BRENNAN CENTER FOR JUSTICE

DESIGN DEFICIENCIES AND LOST VOTES

Lawrence Norden and Sundeep Iyer

Brennan Center for Justice *at New York University School of Law*

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ACKNOWLEDGEMENTS

Much of the data analyzed in this report was obtained in connection with litigation about the overvote protections employed for New York's new voting systems. The action was brought on behalf of the NAACP New York State Conference, the National Coalition on Black Civic Participation, Families United for Racial and Economic Equality, and several individual plaintiffs, who argued that the lack of adequate overvote protections would have a discriminatory impact on African-American, Hispanic, and other minority voters.

The Brennan Center is especially indebted to Professor David Kimball for sharing his substantial research and knowledge in this area and allowing us to use much of it in this report. We also thank Whitney Quesenbery of WQusability and Dana Chisnell of Usability Works for their insights on how ballots and voting systems can be made more usable, and for their substantial substantive contributions to this report. More generally, we thank the Election Verification Network and its many participants for their valuable insights and for informing our thinking about how best to improve election systems.

The report benefited greatly from the insightful and thorough editorial assistance of Andrew Goldston and John Kowal of the Brennan Center, as well as Amelia Frenkel, first-year law student at NYU School of Law.

The Brennan Center gratefully acknowledges the Quixote Foundation for its assistance and commitment to the improvement of voting technology in America. We also thank the Bauman Family Foundation, Carnegie Corporation of New York, Democracy Alliance Partners, Ford Foundation, The Joyce Foundation, The Irving B. Harris Foundation, Mitchell Kapor Foundation, Michael Kieschnick, Nancy Meyer and Marc Weiss, Open Society Foundations, Rockefeller Family Fund, Tides Advocacy Fund and Wallace Global Fund for their generous support of our voting work. The report could not have been completed without many hours of research, data analysis, and general assistance from Brennan Center research associates John Travis and Lianna Reagan. The authors are also grateful to attorneys with the firm Jenner & Block, LLP, in particular Stephen Ascher, Randall Adams, and Michael Ross for their legal analysis and research.

The statements made and views expressed in this report are solely the responsibility of the authors.

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In April 2009, Mr. Norden completed his duties as Chair of the Ohio Secretary of State's bipartisan Election Summit and Conference, authoring a report that recommended several changes to Ohio's election administration practices and laws; the report was endorsed by most of the State's voting rights groups, as well as the bipartisan Ohio Association of Election Officials. In June 2009, he received the Usability Professional Association's Usability In Civic Life Award for his "pioneering work to improve elections." Mr. Norden is the lead author of the book The Machinery of Democracy: Protecting Elections in an Electronic World (Academy Chicago Press) and a contributor to the Encyclopedia of American Civil Liberties (Routledge 2007).

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I. Executive Summary

In 2010, New Yorkers voted on electronic, optical-scan voting machines for the first time. Citizens went to their polling places on Election Day, filled out paper ballots and fed them into the brand-new optical scan machines.

But tens of thousands of their votes did not count. Specifically, about 20,000 voters in New York State did not have their votes for governor counted because the machines read their choices as "overvotes" – the invalid selection of more than one candidate. Even more votes were lost in other contests – 30,000 to 40,000 more. In a presidential year, with nearly twice the turnout, we expect that the number of votes lost because of overvoting would more than double, possibly resulting in **more than 100,000 lost votes**.

In modern history, New York has never seen so many lost votes due to overvoting. Unlike the new optical scan voting system, New York's old lever machines did not allow overvoting. But even so, the numbers of lost votes due to overvoting in 2010 were far greater than they should have been. Overvotes are almost always unintentional. A well-functioning voting system, even one that includes optical scan equipment, should have overvote rates very close to zero.

A great irony of this new problem is that the federal mandate to purchase new machines was specifically meant to reduce overvotes nationwide. Tens of thousands of votes were voided as overvotes in 2000, in places like Florida on punch card and other voting systems. The Help America Vote Act ("HAVA"), passed by Congress in 2002, requires that new voting systems used in polling places in United States must:[3]

(i) notify the voter [when she] has selected more than one candidate for a single office on the ballot;
(ii) notify the voter before the ballot is cast and counted of the effect of casting multiple votes for the office; and
(iii) provide the voter with the opportunity to correct the ballot before the ballot is cast and counted.

The Brennan Center, NAACP New York State Conference and other civil rights and good government groups have argued that New York's overvote protections did not satisfy these requirements and predicted in a lawsuit filed in 2010 that these inadequate protections would lead to such high overvote rates.[4] Specifically, they pointed to a message voters would see if the machine could not discern the voter's intent; the groups argued this message would confuse voters, making it more likely they would cast invalid votes, and less likely that they would correct their ballots to ensure they were accurately counted.[5]

As we demonstrate in this paper, the lack of adequate overvote protections had a disproportionately negative impact on the state's poorest communities. Lost votes due to overvoting occurred far more frequently in areas with higher populations of low-income residents, people of color, and immigrants. Black and Hispanic voters were at least twice as likely to lose votes due to overvoting as non-Hispanic whites. Shockingly, in two Bronx election districts, nearly 40 percent of the votes cast for governor were voided as overvotes.

The good news is that the New York State Board of Elections has agreed to adopt a better overvote warning when a voting machine cannot discern voter intent, hopefully in time for the November 2012 election: such a warning will inform the voter of the problem in plain English ("you have filled in too many ovals"), and clearly explain the consequences of casting an overvote ("your vote will not count"). The new message can be found in Appendix A of this report.

This should significantly reduce the number of overvotes in 2012, but it will not eliminate the problem. There is more that our public officials, and especially our state legislators, could do. In this report, we discuss how commonsense solutions, like requiring boards of elections to publish precinct-level election results, can improve detection and correction of machine-related problems. Critically, we also explore how better ballot design requirements can reduce overvotes.

Finally, we examine the national implications of our findings in New York.

A. Core Findings from Examination of 2010 Data

New York's new voting systems record election totals, including overvotes, by election district. The analysis in this report is in large part derived from our examination of that data, which was produced by local boards of elections in New York City and a number of other New York counties in response to discovery requests filed by the Brennan Center in connection with litigation about the voting machine overvote messages in New York.[6] The data provided by the City[7] and other counties, as well as additional research and analysis by Brennan Center staff, led us to several important findings:

For the first time in 2010, tens of thousands of New Yorkers' votes were disqualified for overvoting.

- Statewide, we estimate about 20,000 votes were lost in the governor's contest alone, with between 50,000 and 60,000 overvotes in all contests.[8] Absent remedial action, we could expect these numbers to more than double, with well over 100,000 disqualified overvotes in a presidential year.[9]

- In New York City alone, we estimate there were well over 6,500 lost votes resulting from overvotes in the governor's contest, and close to 20,000 overvotes in all contests.

- These overvote numbers far exceed what should be expected from a well-functioning voting system. Tens of thousands of votes were unintentionally lost.

Polling places with high concentrations of poor residents and language minorities had the highest overvote rates.

- Across New York City, black and Hispanic voters were more than twice as likely as non-Hispanic white voters to have votes voided as a result of overvoting. We estimate about 1 in 100 black and Hispanic voters in New York City lost their vote for governor due to overvoting. Hispanic voters had the highest overvote rates in the City.

- Election districts in neighborhoods with high immigrant populations, such as Chinatown, Jackson Heights and Brighton Beach, also had exceptionally high numbers of voided overvotes. These neighborhoods are home to significant numbers of language minority voters.

- Overvote rates in the governor's race were highest in the Bronx; nearly 1 percent of all gubernatorial votes in the Bronx were not counted because of overvotes. The areas with the highest overvote rates were concentrated in low-income and predominantly Hispanic sections of Mott Haven and Port Morris. Two election districts in the South Bronx had overvote rates of close to 40 percent.

New York City and other counties in New York State are not fully leveraging information provided by voting machines to ensure that all intended votes are counted.

- As of this writing, we are aware of only one county in the entire state – Rockland County – that publishes overvote data by election district.

- Even when responding to discovery requests during litigation, New York City was **unable to produce precinct-level data for more than half of all election districts in Queens and Brooklyn**. The election districts for which the City could not produce overvote data had disproportionately high concentrations of non-white voters. Of the 57 counties outside New York City, **28 counties failed to produce requested overvote data at all.**

- Overvote data can alert election officials and the public to potential problems with voting machines, poll worker training, or voter education. For example, in 2010, the New York City polling place with the highest overvote rates was located in the Port Morris neighborhood of the South Bronx. The six election districts with the highest overvote rates in the City were all located in this polling place, with **more than 1 in 5 votes lost** in the governor's contest due to overvoting. This indicates a serious problem that warrants investigation.

Poor Ballot Design Will Lead to More Overvotes

- Data from New York City suggests that a confusing ballot design led to many hundreds of extra overvotes. Consider the two separate U.S. Senate elections that were both on the 2010 ballot. In Sen. Kirsten Gillibrand's contest, the candidates were listed over two rows. By contrast, candidates in Sen. Schumer's contest were listed across just one row. There were more than twice as many overvotes in Sen. Gillibrand's contest as in Sen. Schumer's contest.

- The contests for governor and for Sen. Gillibrand's seat had the two highest overvote rates in New York City. These were the only two contests where the candidates were listed over two rows.

- The basic problem with current ballot design requirements is that they were drafted for lever machines. **New York's ballots are a paper representation of the lever machines, but the new optical scan machines do not have nearly the level of overvote protection of lever machines (which did not allow overvotes).**

- The results in this report reaffirm the connection, established in several national studies, between poor ballot design and higher overvote rates. [10]

The Problems in New York Have National Implications

- Recent elections in other states like Florida and Ohio show us how poor ballot design, combined with inadequate overvote protections, continue to result in many thousands of lost votes, a decade after the 2000 election debacle and the passage of HAVA.

- As in New York, the poor and racial and ethnic minorities in other parts of the country have been most impacted when these problems are not adequately addressed.

B. Recommendations to Further Reduce Overvotes

As already discussed, New York has agreed to adopt a new overvote message for its voting machines, hopefully in time for the 2012 elections. But even with this improvement on the way, there is more that should be done, particularly in the state legislature, to reduce overvotes and address other election problems. New York can take steps to ensure that election administrators and the public are able to monitor data provided by New York's new voting machines and address problems that can lead to disenfranchisement at the polling place. And the state legislature must modify ballot design requirements, which make ballots difficult to read and lead to voter error.

While these recommendations are specific to New York, they are just as important nationally. This is discussed in greater detail at 23-26.

1. Require Publication of Regular Reports of Election Day Data by Election District

New York's voting machines allow election officials to collect and publish vote totals by election district, including overvotes and undervotes, but many jurisdictions don't publish these election district-level numbers. Given the high levels of overvotes recorded in 2010, we recommend that New York follow practices adopted by the state of Florida, such as requiring: (1) all counties to report election totals, including numbers of overvotes, by precinct, and (2) the state to issue, after every federal election, a report assessing voting system performance and administrative procedures based upon that data. We believe such a reporting system would allow state and local election officials to quickly identify and correct the kinds of issues that may have led to the exceptionally high overvote rates in election districts in places like the Port Morris and Mott Haven sections of the South Bronx in 2010.

2. Mandate State and Local Action to Address Problems Discovered From Election District Reports

Where problems are found, the state and local boards of elections should be required and empowered to address them. For instance, if there are high overvote rates in election districts where many voters have limited English proficiency, local boards should investigate the reasons for the high overvote rates. When necessary, local boards could educate translators, monitors, and machine attendants who work at those election districts about overvoting and its causes.

3. Provide Public Access to Ballots

Better overvote notification in 2012 should make it more likely that voters will correct their ballots when the machines cannot read them. But to effectively reduce overvoting, public advocates who interact with voters must have the tools to understand why overvotes are happening in the first instance. That means treating ballots as public records—as they are in so many states[11]—so that members of the public and voting experts can review overvoted ballots to determine why those ballots may have been overvoted. Moreover, as noted on page 11 of this report, overvotes can sometimes be caused by a machine or procedural error and a review of the paper ballot could show there was, in fact, no overvote. New York law currently allows review of ballots only under very limited circumstances.[12] There is no

provision in the law for members of the general public, academics, or public advocacy groups to review paper ballots.

4. Improve New York's Ballot Design Requirements

The Brennan Center has previously determined New York's election code and regulations violate several basic usability principles.[13] This makes it more difficult for election officials to design usable ballots and more likely that voters will make mistakes like overvoting when casting their ballots. To reduce overvoting, New York should re-examine its ballot requirements and give election officials more guidance and greater flexibility to design user-friendly ballots. For instance, New York ought to give election officials enough flexibility to design ballots so they display all candidates for each contest across one row, even when there are more than eight candidates and parties for that contest. This will obviate the need for candidates in a particular contest to be displayed across multiple rows of the ballot, a ballot design flaw that is a primary cause of overvoting. State election law could also be amended to encourage election officials to use borders and shading more effectively so that voters can more clearly distinguish one contest from another.

II. Overvoting in New York: An Overview of the Data

Based on the data provided by New York City and 28 other counties, **we estimate that approximately 20,000 votes in the governor's contest were lost due to overvoting statewide, with between 50,000 and 60,000 overvoted contests in total.**[14]

We further estimate that in New York City alone, there were over 6,500 overvotes cast on Election Day in the 2010 gubernatorial contest.[15] In total, for all of the election contests, **we estimate that there were at least 18,958 overvotes during Election Day voting in the City.** Appendix A to this report details the number of overvotes in each election contest in the City. We estimate that there were at least 1,000 overvotes in the City in every statewide election contest.

Figure 1 displays the overvote rates in the 2010 governor's contest in each New York State county that maintains accessible overvote data. Several counties in New York State outside of New York City reported alarmingly high overvote rates, including Chemung, Cortland, Greene, Madison, Orange, Oswego, and Yates counties. All of these counties had overvote rates of 0.4% or more in just the governor's contest. Other counties that we might expect to have had high overvote rates, including Erie, Monroe, Nassau and Westchester counties, either did not provide us with overvote information, or provided it in a format that made it impossible to calculate the aggregate overvote rate in a reasonable time.[16] Those areas within New York State that are not color-coded represent the counties that did not provide accessible overvote data.

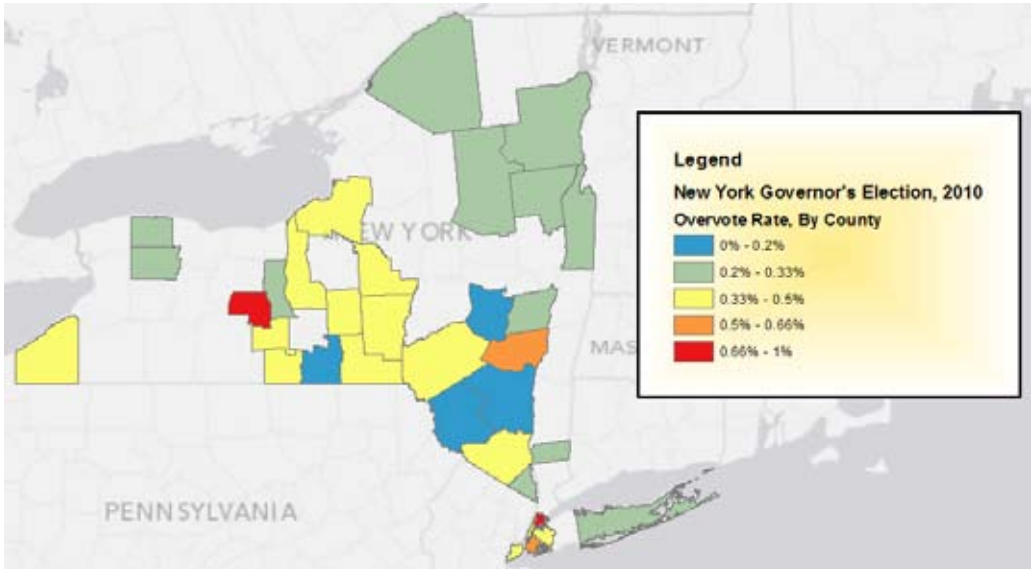


Figure 1: Overvote rates in the 2010 governor's contest, by county in New York State.

Unfortunately, even among the counties that provided data, few provided that information in an accessible format that would allow us to readily analyze data by election district. Accordingly, we have limited our detailed analysis of overvoting to New York City, which had the largest total number of overvotes of the jurisdictions that provided information (though Chemung, Greene, and Yates counties recorded higher overvote rates).

III. Detailed Analysis of New York City Overvotes

Table 1 displays the total estimated number of overvotes in the 2010 gubernatorial general election in each New York City borough.

	Vote Totals From NYC Data	Overvote Rate from NYC Data	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.90 percent	174,613	1,572
Brooklyn	183,200	0.51 percent	394,057	2,028
Manhattan	339,138	0.35 percent	341,778	1,188
Queens	153,849	0.42 percent	337,366	1,403
Staten Island	94,892	0.34 percent	94,993	322
Totals	**944,064**	**0.49 percent**	**1,342,747**	**6,513**

Table 1: Estimated number of election day overvotes in 2010 governor's race, by borough. *Vote Totals from NYC Data* and *Overvote Rate from NYC Data* are taken from data provided by the New York City Board of Elections to the Brennan Center and Plaintiffs. *Total Number of Election Day Votes* is taken from New York State Board of Elections website. *Estimated Number of Election Day Overvotes* is calculated by multiplying *Overvote Rate from NYC Data* by the total number of machine votes cast on Election Day.

To illustrate just how high this number is, it is worth remembering that **prior to 2010, there were virtually no overvotes on Election Day in New York**, because the lever machines did not allow them. Even among jurisdictions that use optical scan voting machines, overvote rates should generally be at or close to zero. The federal Election Assistance Commission stopped collecting overvote data from counties in 2004.[17] But Professors David Kimball and Martha Kropf collected vote totals from every county in 2008 and included overvote data where available. Of the 206 counties that used precinct count optical scans and provided overvote data in 2008, the median overvote rate was 0.12%. That is less than a quarter of the overvote rate in New York City in 2010, and less than one seventh the rate in the Bronx.[18]

A. High Overvote Areas By New York City Borough

Figure 2 provides an overview of overvote rates across all five boroughs in the city. The figure displays in shades of blue those election districts with overvote rates in the gubernatorial election that were less than 1 percent. The red and orange election districts have the highest overvote rates in the city.

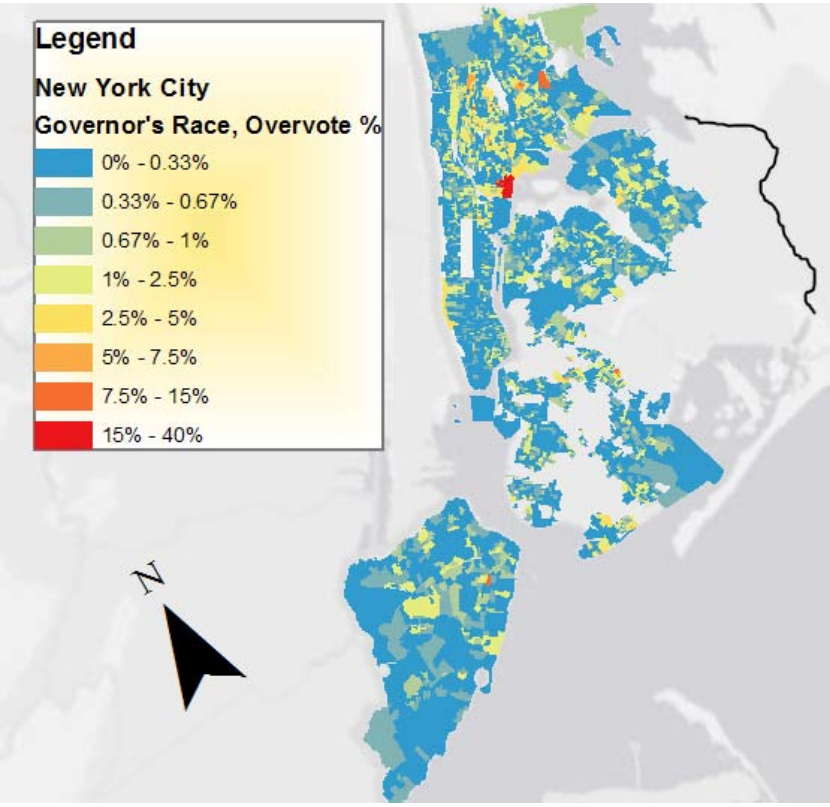


Figure 2: Overview of overvote rates in New York City, 2010 gubernatorial election. The black line at right represents the eastern edge of New York City; in areas within the city that are not color-coded, the City could not provide overvote data.

Given that overvotes are almost always mistakes, overvote rates of more than 1 percent are deeply troubling. As Table 2 shows, nearly 20 percent of election districts in New York City saw such high overvote rates. In the controversial 2000 presidential election in Florida, the overvote rate was 1.8 percent. Over 8.3 percent of election districts in New York City had overvote rates higher than 1.8 percent. This is serious cause for concern.

	% of Precincts with Overvote Rate > 1%
Bronx	31.9%
Brooklyn	19.1%
Manhattan	12.0%
Queens	14.1%
Staten Island	10.1%
Total	**18.3%**

Table 2: Percentage of precincts with overvote rates greater than 1 percent, by New York City borough.

1. High Overvote Districts: The Bronx

As Tables 1 and 2 and Figure 2 demonstrate, overvote rates in the governor's contest were highest in the Bronx. Nearly 1 in 100 gubernatorial votes in the Bronx was not counted because it was an overvote.

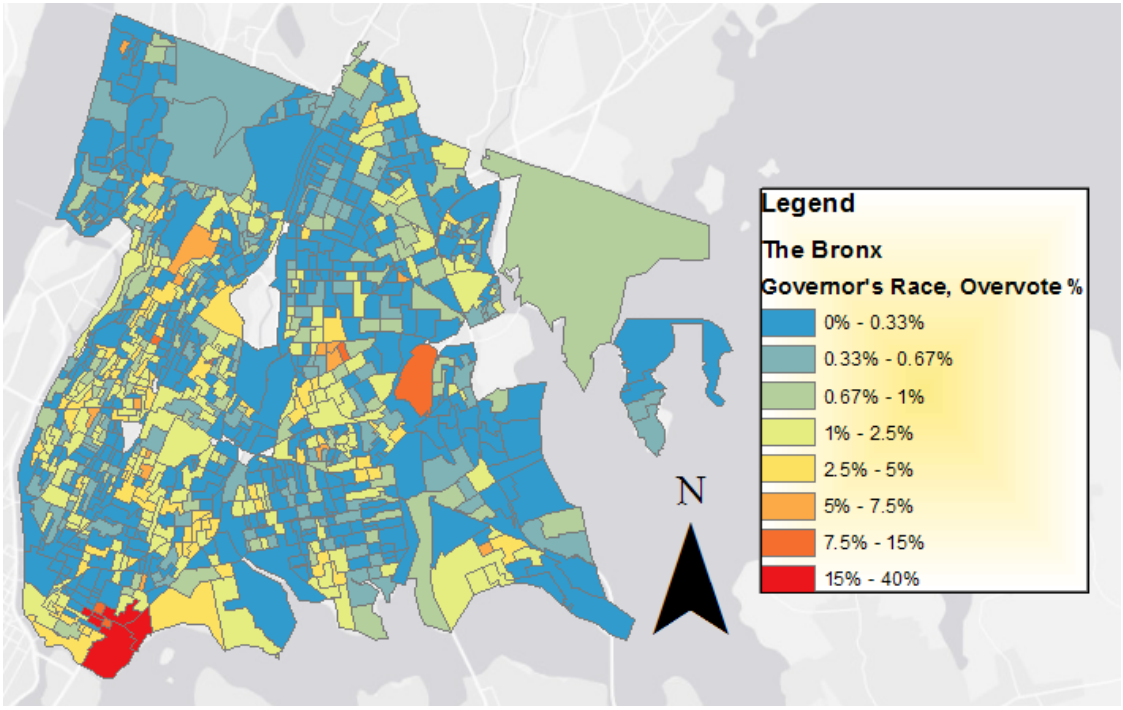


Figure 3: Overvote rates in 2010 gubernatorial election in the Bronx.

Figure 3 above shows the level of overvoting by election district in the Bronx. Colors closer to blue indicate lower overvote rates, and colors closer to red indicate higher overvote rates. The figure indicates that the highest overvote rates were concentrated in the southern and eastern Bronx. Astoundingly, there were seven different election districts with more than 30 ballots cast where 10 percent or more of the voters lost their votes for governor due to overvoting. Six of these election districts were in a single polling place in the Bronx (see inset). The other was in the Morris Park neighborhood in the northeastern Bronx.

Investigating the Extraordinarily High Overvote Rates at P.S. 65 on 677 E 141 St.

Data produced by the City shows that the six election districts in New York City with the highest overvote rates were in one polling place – P.S. 65 on 677 East 141st Street in the South Bronx. In two of these election districts, more than one in three votes for governor were lost because of overvoting. Aggregating across all of these election districts, the overvote rate in the governor's contest was 20.4 percent. There were a staggering 170 overvotes in the gubernatorial election alone. No other polling location in New York City had a total overvote rate that was even half as high as the rate at this location. The voting-age population in these election districts was 73.7 percent Hispanic and 22.8 percent black. The large Hispanic population in these high overvote election districts suggests that voters with limited English proficiency might overvote at higher rates than the rest of the population.

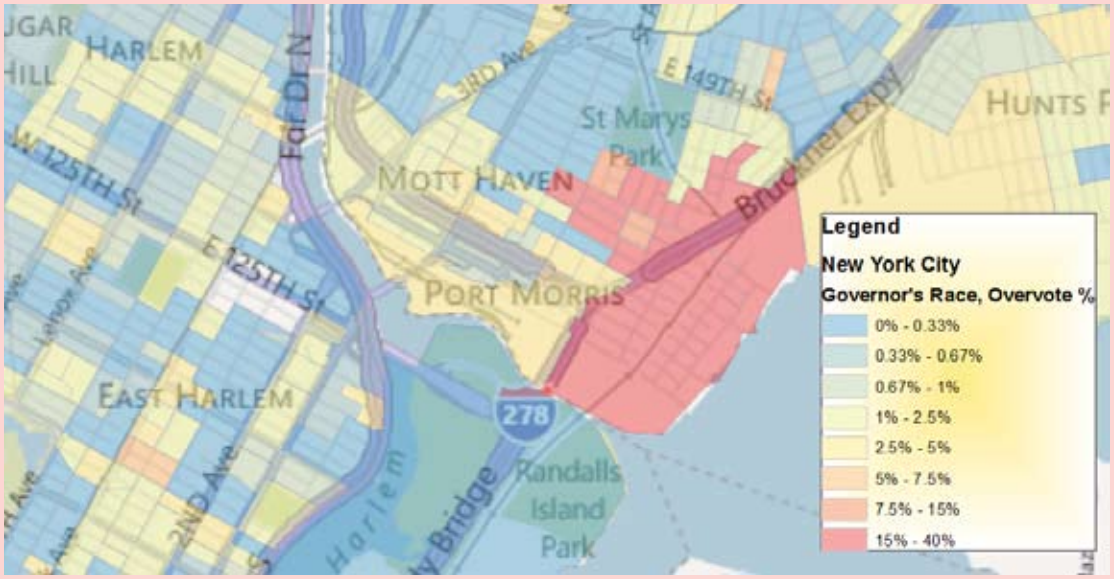


Figure 4: Overvote rate detail for election districts voting at P.S. 65 polling location in South Bronx. These election districts are concentrated in the Port Morris and Mott Haven neighborhoods.

What is even more striking about these overvote numbers is that they were also extremely high in every other contest on the ballot; in most other election districts, the overvote rate for governor was far higher than for any other office. The table below provides the overvote rates for all contested elections on the ballot at this polling location. The consistently high overvote rate across contests suggests that there may have been a machine problem in this polling place: one or more of the machines may have incorrectly recorded overvotes, voiding substantial numbers of valid votes. On the other hand, it is possible that the data reported by the City is simply incorrect; this, too, would raise troubling questions. No matter the cause, these high numbers deserve an investigation and explanation. This investigation should not only assess what may have been wrong with the machines, but also whether poll workers were informed by large numbers of voters that they were getting error messages from the machines, and whether and how they responded.

AD/ ED	Gov	Comp	AG	Sen6	Sen2	SCJust	Cong	SSen	Assemb	CCJ
84/023	39.40%	33.30%	35.80%	38.60%	35.30%	31.30%	36.40%	22.70%	27.70%	33.90%
84/088	35.10%	31.60%	28.00%	28.60%	26.90%	27.00%	27.70%	26.50%	27.30%	32.30%
84/058	19.40%	25.00%	11.50%	17.90%	26.90%	18.50%	10.70%	14.80%	20.00%	28.00%
84/066	19.30%	17.90%	15.90%	15.00%	17.90%	16.60%	15.50%	16.20%	16.50%	14.50%
84/057	16.50%	13.50%	14.70%	13.00%	16.80%	13.70%	12.80%	13.00%	15.80%	13.10%
84/065	15.00%	13.30%	9.80%	11.80%	14.40%	10.50%	12.50%	11.50%	13.10%	11.50%

AD/ED: Assembly District/Election District
Gov: Governor
Comp: Comptroller
AG: Attorney General
Sen6: Schumer Senate race
Sen2: Gillibrand Senate race
SCJust: Supreme Court Justice
Cong: Congressional
SSen: State Senate
Assemb: Assembly
CCJ: Civil Court Judge

Table 3: Precincts with highest overvote rates in New York City. All six vote at the P.S. 65 polling location in the South Bronx.

The Brennan Center notified the City Board of its discovery of this potential voting system problem on October 6, 2011, and notified the State Board on October 7, suggesting that the problem should be investigated before the machines used at P.S. 65 in 2010 were used again.[19] Despite our request to be kept informed, we are not aware of any investigation having yet been conducted. Neither the City nor the State has indicated these machines would not be used in the 2011 general election.

2. High Overvote Districts: Brooklyn

Figure 5 displays the overvote rates in the Brooklyn election districts for which overvote data was available. The City did not produce overvote data for 56.2 percent of the election districts in Brooklyn. The election districts for which overvote data was not available are not color-coded; they are represented using the gray background of the map. There are 1,065,000 people of voting-age in Brooklyn election districts for which overvote data was missing; 66.5 percent of that voting-age population is non-white. By contrast, just 59.1 percent of the voting-age population in election districts with available overvote data was non-white. This suggests that election districts where overvote data was not available have much higher concentrations of minority voters.

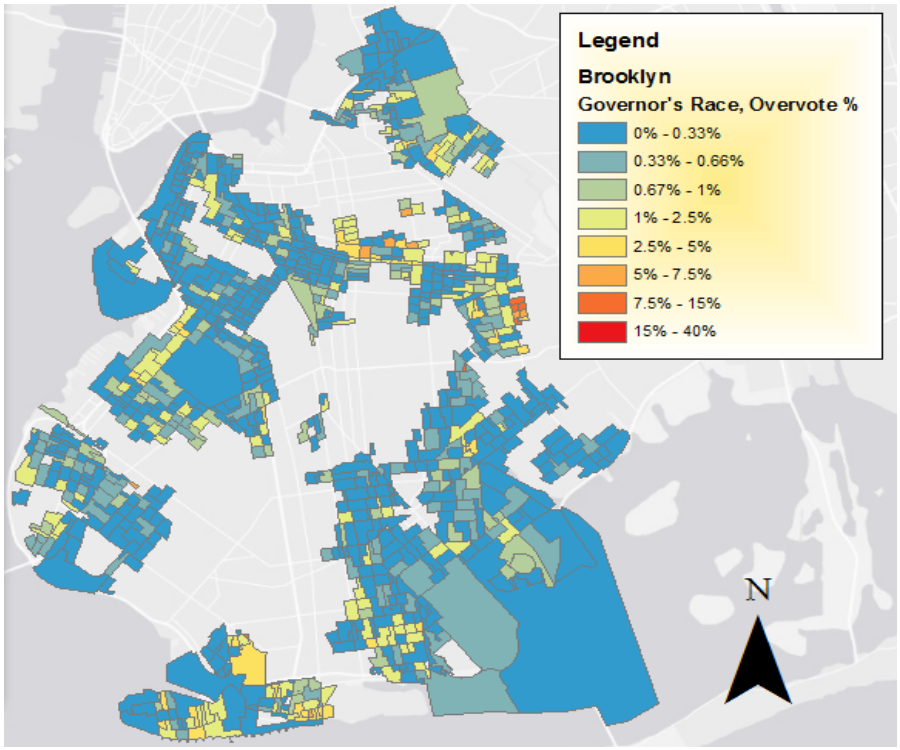


Figure 5: Overvote rates in 2010 governor's contest in Brooklyn election districts. Gray areas in Brooklyn represent election districts for which overvote data was not available.

Among those election districts for which the City did produce overvote data, there were 11 with more than 30 voters in which more than 5 percent of voters lost their votes in the governor's contest due to overvoting. Table 4 details the gubernatorial overvote rate in each of these precincts.

AD/ED	**Overvote Rate for Governor**	**Neighborhood**	**White VAP %**	**Black VAP %**	**Hispanic VAP %**	**Asian VAP %**
55/085	11.8%	Brownsville	0.5%	67.6%	29.6%	0.9%
55/092	8.7%	Brownsville	0.3%	68.6%	28.2%	0.7%
55/093	8.5%	Brownsville	0.3%	68.6%	28.2%	0.7%
55/097	7.9%	Brownsville	0.8%	71.8%	25.3%	1.0%
56/041	6.8%	Bedford-Stuyvesant	7.9%	80.5%	7.0%	2.2%
56/032	6.5%	Bedford-Stuyvesant	9.2%	73.2%	8.5%	3.9%
55/095	6.1%	Brownsville	1.2%	64.4%	33.5%	0%
46/051	5.9%	Brighton Beach	90.3%	0.5%	6.3%	2.3%
56/043	5.6%	Bedford-Stuyvesant	2.4%	86.6%	7.8%	1.9%
55/096	5.4%	Brownsville	0.8%	72.5%	25.0%	6.3%
56/073	5.2%	Bedford-Stuyvesant	0.5%	91.3%	6.3%	1.1%

Table 4: Election Districts in Brooklyn with overvote rates greater than 5 percent in the governor's contest. Only includes election districts with more than thirty voters. *VAP percent* columns show the percentage of the voting-age population by race in each election district, based on the 2010 Census.

Ten of these election districts were located in the Bedford-Stuyvesant and Brownsville neighborhoods. The Brownsville districts – all in Assembly District 55 – are concentrated entirely within the Tilden, Brownsville and Van Dyke housing projects located just east of Rockaway Avenue in Brownsville. The precinct with the highest overvote rate in Brooklyn in the governor's contest – 11.8 percent – is located in this cluster of housing projects. The Brownsville election districts have a very large concentration of people of color: the cumulative voting-age population in the Brownsville districts is 55.1 percent black and 80.6 percent non-white, suggesting that black and other minority voters are at greater risk for overvoting. The only election district outside Brownsville and Bedford-Stuyvesant that has an overvote rate greater than 5 percent – 46/051 – is located in immigrant-heavy Brighton Beach.

Figure 6: Overvote rates in 2010 governor's election, Bedford-Stuyvesant and Brownsville in Brooklyn.

While Figure 6 provides some indication of the severity of the overvoting problem in Brownsville, it is equally informative in what it does not show. Just as in Figure 5, only part of the map is color-coded with overvote rates. The rest – displayed using the standard gray of the street map – represents areas where the City did not produce overvote data.

As shown in Figure 6, many of these "gray" areas in Brooklyn are adjacent to high overvote election districts; for instance, there is no overvote data on any of the blocks directly south or west of the high overvote areas in Brownsville areas or on the blocks directly north of the high overvote areas in Bedford-Stuyvesant. We expect that some of these areas could have high overvote rates, too.

Unlike some of the high overvote election districts in the Bronx, the high overvote districts in Brooklyn did not have consistently high overvote rates across all contests. In fact, the overvote rates in nearly every other contest are much lower than in the governor's race. It is worth noting, however, that the election district with the highest overvote rate in the Supreme Court contest had an astounding 18.1 percent overvote rate; in fact, there were three election districts – 55/082, 55/095 and 56/043 - which had overvote rates above 10 percent for the Supreme Court contest. All three were located in the Bedford-Stuyvesant and Brownsville neighborhoods shown in Figure 6.

3. High Overvote Rate Districts: Manhattan

Figure 7 illustrates the overvote rates in Manhattan election districts. Nearly all of the election districts in lower and midtown Manhattan have overvote rates below 1 percent. Most of the borough's high overvote election districts are concentrated in the Washington Heights, Harlem, and East Harlem neighborhoods in upper Manhattan.

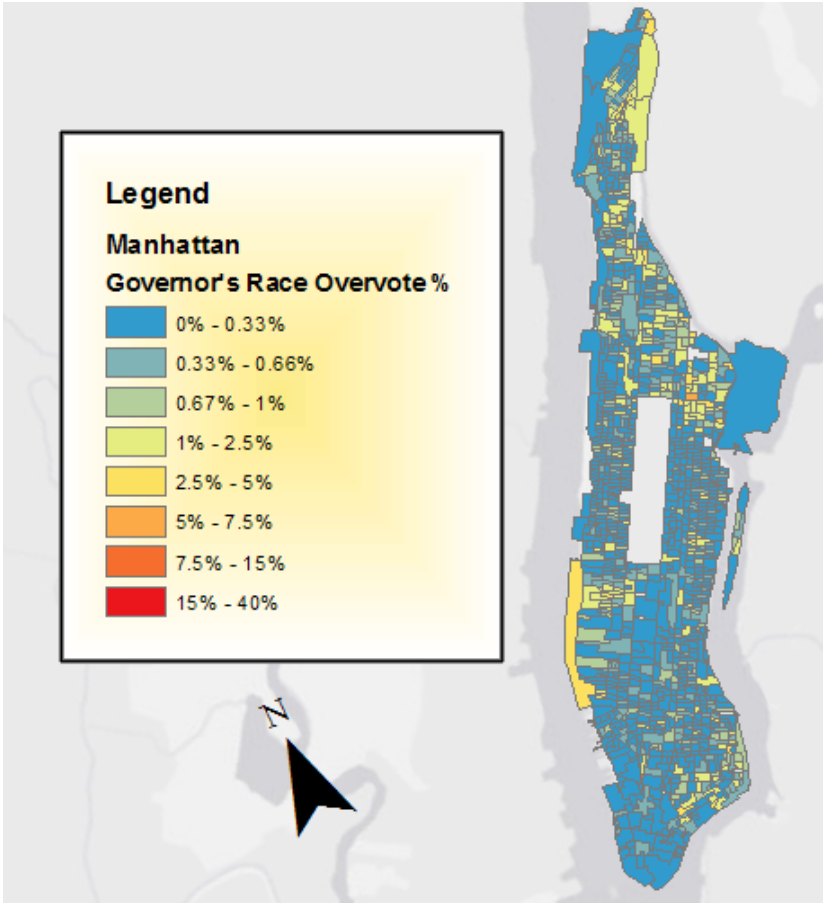


Figure 7: Overvote rates in Manhattan election districts.

Table 5 describes the five Manhattan election districts with the highest overvote rates. Manhattan's first and third highest overvote rates are in adjacent election districts in East Harlem, covering the blocks between 110th and 113th Street between Third and Park Avenues. These election districts are displayed in Figure 4 on page 11, which also displayed the high overvote election districts in the south Bronx. Across these two election districts, more than one in every twenty ballots cast were not counted because of overvoting. The voting-age population in these two districts was 55.5 percent Hispanic, 25.0 percent black and just 9.6 percent white. Again, the demographic makeup of the high overvote election districts suggests that people of color might be more likely to overvote than whites. The high number of Hispanics in these districts, as in the South Bronx, suggests that people for whom English is a second language may have particularly high overvote rates.

AD/ED	**Overvote Rate for Governor**	**Neighborhood**	**White VAP %**	**Black VAP %**	**Hispanic VAP %**	**Asian VAP %**
68/051	**6.4%**	East Harlem	20.0%	15.9%	51.3%	10.1%
71/096	**4.8%**	Washington Heights	4.1%	18.0%	76.8%	0.3%
68/073	**4.3%**	East Harlem	1.0%	32.6%	59.0%	6.1%
68/112	**3.8%**	East Harlem	2.0%	33.8%	58.3%	3.9%
74/033	**3.8%**	East Village	12.3%	15.0%	51.2%	19.9%

Table 5: The five election districts with the highest overvote rates in Manhattan. Only includes election districts with more than thirty voters. *VAP %* columns show the percentage of the voting-age population by race in each election district, based on the 2010 census.

Outside of the Harlem and East Harlem neighborhoods, there is one other Manhattan neighborhood with consistently high overvote rates: Chinatown. Though none of the election districts in Chinatown are among the borough's top five in overvote rates, there are nine different election districts in Chinatown and the neighborhoods directly south of it with overvote rates above 1 percent as well as majority Asian voting-age populations. The high number of Asian voters in these election districts, as with Hispanics in the South Bronx and East Harlem, reaffirms our conclusion that voters with limited English proficiency may have very high overvote rates. This is true even though voters in areas with high numbers of language minorities in New York City have the option of receiving messages from the machine in Spanish, Chinese or Korean, and indicates just how important it is to ensure the availability of good translators at the polls.

4. High Overvote Districts: Queens

Figure 8 provides an overview of the geographic distribution of high overvote rates across Queens. The black lines in the figure outline the boundaries of the borough; as in Figure 5, the regions that are not color-coded in Queens represent election districts for which the City failed to produce overvote data. As in Brooklyn, the City failed to produce overvote data for more than half – 56 percent – of the election districts in Queens. The missing data include many election districts we might expect to have high overvote rates. For instance, the City was unable to provide overvote data for the South Jamaica and Jamaica Gardens neighborhoods in Queens: people of color, who are more likely to lose votes to overvoting – as we demonstrate in subsequent sections of this report – make up more than 90 percent of the voting-age population in several clusters of election districts in both neighborhoods. Indeed, the Queens election districts for which the City could not produce overvote data contain 852,131 people of voting age, and 74.7 percent of that population is non-white. By comparison, in election districts with available overvote data, just 66 percent of the voting-age population was non-white. In other words, the election districts where overvote data was not available have much higher concentrations of minority voters.

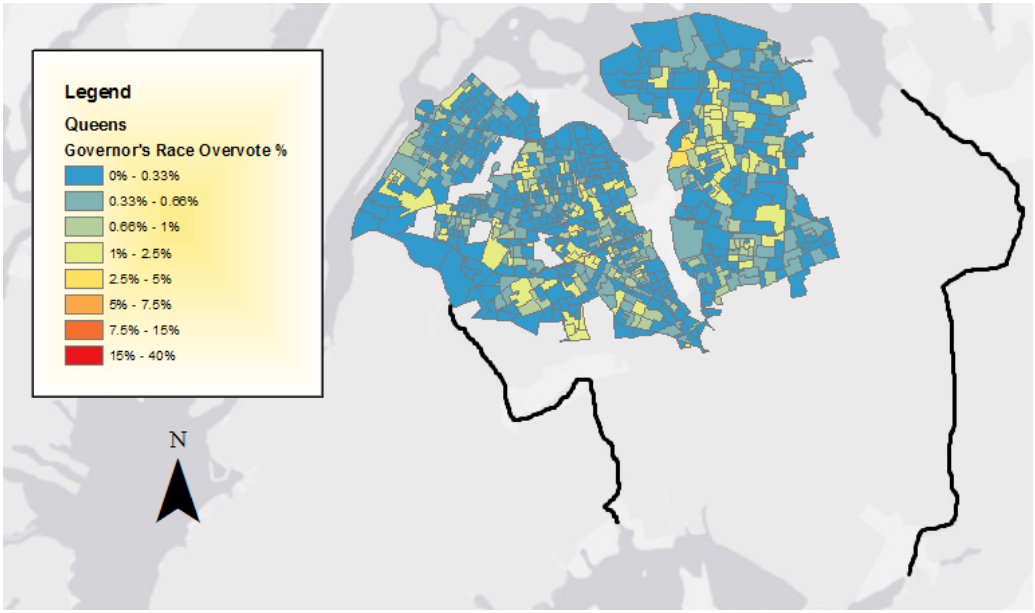


Figure 8: High overvote rates in Queens election districts. Black lines indicate outer boundaries of Queens; non-color-coded regions in Queens represent election districts without overvote data.

Even within the limited sample of data provided by the City, there were a number of election districts with very high overvote rates. Table 6 lists the five Queens election districts with the highest overvote rates in the governor's contest.

AD/ED	**Overvote Rate for Governor**	**Neighborhoods**	**White VAP %**	**Black VAP %**	**Hispanic VAP %**	**Asian VAP %**
35/028	**4.6%**	Rego Park	27.5%	7.6%	20.1%	40.9%
22/008	**3.6%**	Flushing	14.9%	1.7%	18.2%	64.9%
22/003	**3.3%**	Flushing	3.9%	15.1%	18.9%	60.9%
34/046	**2.7%**	Jackson Heights	2.5%	2.0%	84.7%	10.1%
35/044	**2.7%**	LeFrak City	5.4%	0.8%	23.3%	67.6%

Table 6: Five election districts with highest overvote rates in Queens. Only includes election districts with more than thirty voters. *VAP percent* columns show the percentage of the voting-age population by race in each election district, based on the 2010 Census.

The highest overvote districts in Queens are concentrated in immigrant-heavy neighborhoods like East Flushing, Jackson Heights and Rego Park. Over 70 percent of the voting-age population in all five of the election districts in Table 6 is non-white. The voting-age population in the second, third and fifth of the election districts listed in Table 6 is more than 60 percent Asian. Once again, voters in immigrant-heavy communities seem to be more likely to overvote. This reaffirms the importance of having good translators who can assist voters the polls.

5. High Overvote Districts: Staten Island

Among the City's five boroughs, Staten Island had the lowest overvote rates. Nonetheless, with a borough-wide overvote rate of 0.34 percent in the governor's contest, and with 1 in 10 districts reporting overvote rates exceeding 1 percent, overvoting was still all too common in Staten Island. Figure 9 shows the geographic distribution of overvoting across Staten Island election districts. Election districts with overvote rates above 1 percent were scattered throughout the borough. However, as the figure demonstrates, high-overvote election districts were concentrated in the West New Brighton neighborhood to the north and the Bull's Head and Old Town neighborhoods in the middle of the island.

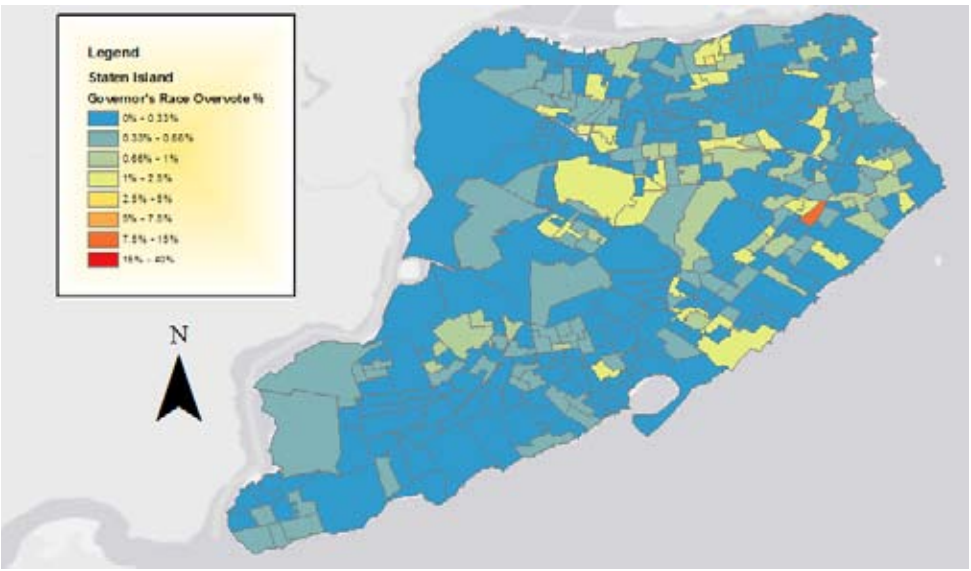


Figure 9: Overvote rates in Staten Island election districts.

Table 7 lists the five election districts in Staten Island with the highest overvote rates in the governor's contest. The election district with the borough's highest overvote rate appears to be a gross anomaly; its overvote rate was more than twice the overvote rate in any other election district in Staten Island. That election district, shown in orange in Figure 9, is located in the Old Town neighborhood; the voting-age population is 79.7 percent white. The second, fourth and fifth districts shown in Table 7 are located in the low-income West New Brighton neighborhood; in all three, the voting-age population is over 70 percent non-white, with an approximately equal cumulative number of blacks and Hispanics.

AD/ED	Overvote Rate in Governor's Contest	Neighborhoods	White VAP %	Black VAP %	Hispanic VAP %	Asian VAP %
60/024	9.2%	Old Town	79.7%	0.6%	11.0%	7.2%
61/051	4.1%	West New Brighton	6.9%	52.2%	35.4%	2.1%
63/008	2.8%	Grasmere	68.5%	2.7%	14.4%	13.3%
61/086	2.1%	West New Brighton	28.1%	17.2%	40.1%	13.1%
61/044	2.0%	West New Brighton	17.4%	41.4%	33.9%	4.9%

Table 6: Five election districts with highest overvote rates in Staten Island. Only includes election districts with more than thirty voters. *VAP %* columns show the percentage of the voting-age population by race in each election district, based on the 2010 Census.

B. Estimating New York City Overvote Rates by Race

We know how many overvotes were cast in each election district for which New York City provided information. We also know the voting-age population, by race, in each of these election districts. From this data, we can gain some sense of how black, Hispanic and non-Hispanic white New Yorkers were impacted by the overvote error message used in 2010.[20]

The analysis of high overvote areas in New York City suggested that people of color were more likely to overvote. Using a statistical technique known as ecological inference, we can more rigorously estimate overvoting patterns for blacks and Hispanics in four of the five boroughs.[21] Appendix C describes our methodology in greater detail; the appendix also provides the 95 percent confidence intervals associated with our estimates. Table 7 provides the results of the ecological inference analysis; the table estimates the overvote rate among actual voters.

	White	Black	Hispanic
Bronx	0.55%	1.08%	1.28%
Brooklyn	0.35%	0.63%	1.37%
Manhattan	0.20%	0.82%	0.91%
Queens	0.24%	0.64%	1.37%
Staten Island	0.21%	***	***

Table 7: Estimated overvote rates by race and borough, gubernatorial election 2010.

In the four boroughs for which it was possible to make accurate inferences about blacks and Hispanics**, we estimate that black and Hispanic voters overvoted at significantly higher rates than white voters.** The lone exception is in Queens, where the difference between black and white overvote rates is not statistically significant because the size of the black population is small and thus increases our uncertainty with respect to the black overvote estimate. Nonetheless, Hispanic voters in Queens are still much more likely to overvote than white voters.

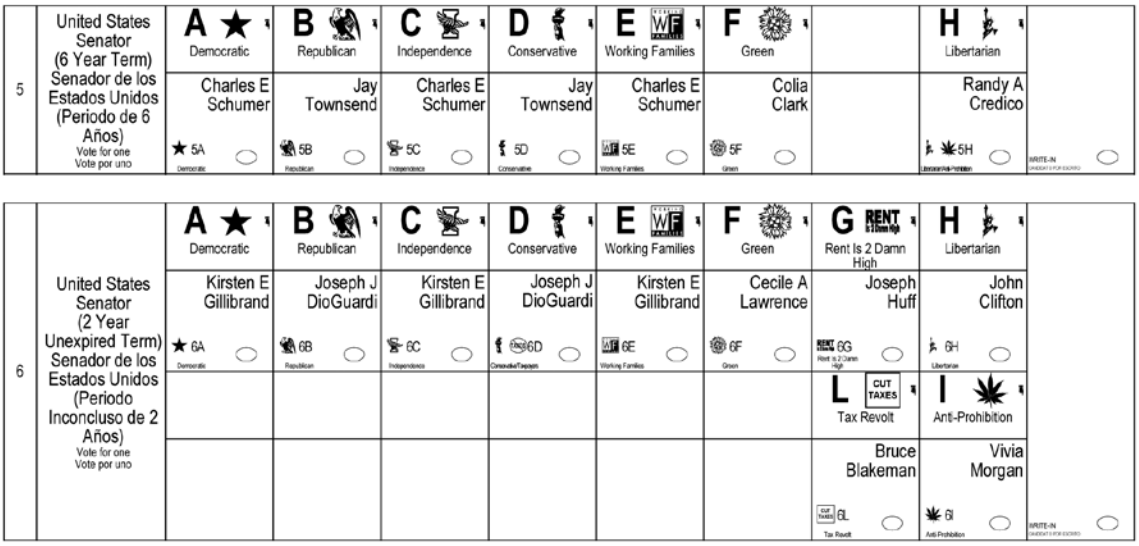
In the Bronx and Brooklyn, the black overvote rate is nearly double the white overvote rate, and in Manhattan, it is more than quadruple the white overvote rate. The Hispanic overvote rate is more than double the white overvote rate in the Bronx, about quadruple the white overvote rate in Brooklyn and Manhattan, and more than five times the white overvote rate in Queens.

All of this suggests that the inability of the overvote error message to deter overvoting may have placed a disproportionate burden on people of color.

Table 3 also indicates that Hispanic voters are consistently more likely to overvote than even black voters. The difference between Hispanic and black overvote rates in the Bronx, Brooklyn, and Queens is statistically significant. Though the Hispanic overvote rate is greater than the black overvote rate in Manhattan, the high level of uncertainty about the black overvote rate precludes us from concluding that the difference is statistically significant. Nonetheless, the high Hispanic overvote rate in all four boroughs suggests that language barriers might make it more likely that Hispanic voters will overvote. Perhaps language assistance is not readily available for some Spanish-speaking voters, or perhaps the overvote error message given in Spanish was not clear for these voters. Our results appear to be symptomatic of unremediated election administration problems that have made Hispanic voters more likely to have their ballots discarded.

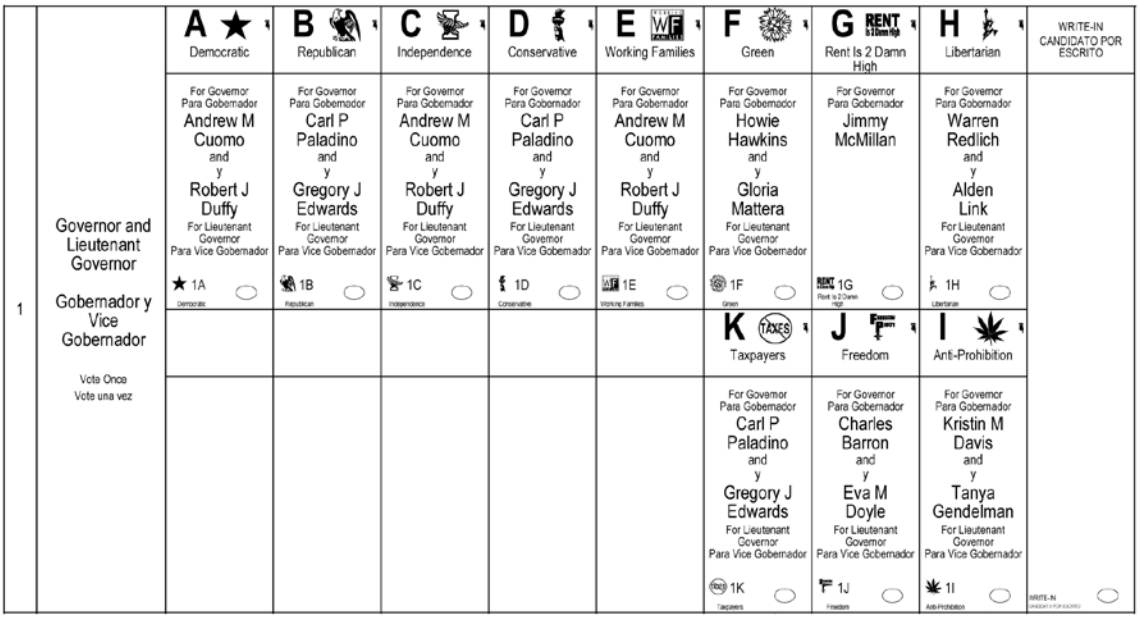
IV. The Impact of Ballot Design on Overvoting in the Gillibrand Senate Contest

Several studies have shown that confusing ballot design can lead to errors. In particular, splitting candidates for the same office onto different rows can lead to overvotes.[22] This was what happened in the Gillibrand senate contest in 2010. Unlike the Schumer senate contest, which was also on the ballot, the Gillibrand contest ran over two rows.



Unsurprisingly, there were many more overvotes in the Gillibrand contest: 3,350 in New York City, compared to just 1,567 in the Schumer contest. While we did not conduct a statewide analysis of lost votes in this contest, if the same pattern applied as in the governor's contest, this could easily mean there were **over 10,000 lost votes statewide in the Gillibrand contest** due to overvoting. Undoubtedly, many of the overvotes in Sen. Gillibrand's contest came from voters filling out ovals in both the first and second rows.

The only other contest on the New York City ballot with candidates listed over two rows was the governor's contest, which saw the highest overvote rates in the City.



		A Democratic	B Republican	C Independence	D Conservative	E Working Families	F Green	G Rent Is 2 Damn High	H Libertarian	WRITE-IN CANDIDATO POR ESCRITO
1	Governor and Lieutenant Governor Gobernador y Vice Gobernador Vote Once Vote una vez	For Governor Para Gobernador Andrew M Cuomo and y Robert J Duffy For Lieutenant Governor Para Vice Gobernador ★ 1A	For Governor Para Gobernador Carl P Paladino and y Gregory J Edwards For Lieutenant Governor Para Vice Gobernador 1B	For Governor Para Gobernador Andrew M Cuomo and y Robert J Duffy For Lieutenant Governor Para Vice Gobernador 1C	For Governor Para Gobernador Carl P Paladino and y Gregory J Edwards For Lieutenant Governor Para Vice Gobernador 1D	For Governor Para Gobernador Andrew M Cuomo and y Robert J Duffy For Lieutenant Governor Para Vice Gobernador 1E	For Governor Para Gobernador Howie Hawkins and y Gloria Mattera For Lieutenant Governor Para Vice Gobernador 1F	For Governor Para Gobernador Jimmy McMillan 1G	For Governor Para Gobernador Warren Redlich and y Alden Link For Lieutenant Governor Para Vice Gobernador 1H	
							K Taxpayers	J Freedom	I Anti-Prohibition	
							For Governor Para Gobernador Carl P Paladino and y Gregory J Edwards For Lieutenant Governor Para Vice Gobernador 1K	For Governor Para Gobernador Charles Barron and y Eva M Doyle For Lieutenant Governor Para Vice Gobernador 1J	For Governor Para Gobernador Kristin M Davis and y Tanya Gendelman For Lieutenant Governor Para Vice Gobernador 1I	WRITE-IN

This suggests that if the state hopes to further reduce overvoting, it should amend ballot design requirements to allow election officials to (1) place all candidates and parties in a single row, even when there are more than eight of them and (2) use borders and shading more effectively so that voters can more clearly distinguish one contest from another.

V. The National Significance of Inadequate Overvote Protections

New York in 2010 was not alone among jurisdictions where inadequate overvote protections failed to save votes. Across the country, inadequate overvote protections have contributed to the loss of hundreds of thousands votes in recent years. Frequently, the poor and racial, ethnic and language minorities are impacted the most.

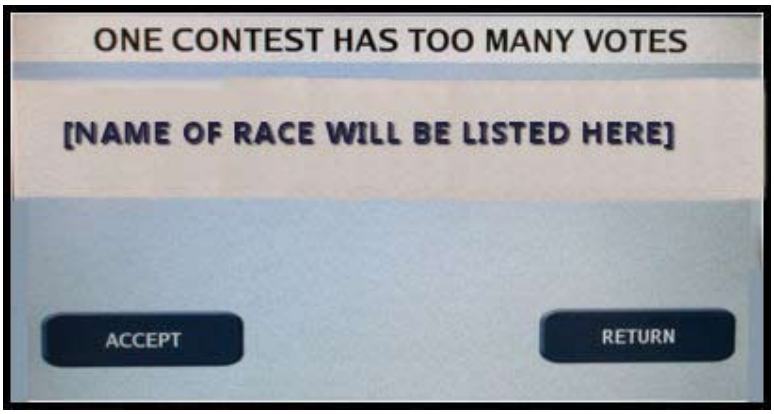
Bad ballot design continues to plague elections; it results in tens, and frequently hundreds, of thousands of lost votes in nearly every federal election.[23] The Help America Vote Act ("HAVA"), passed in 2002, was intended, in part, to help ameliorate the consequences of bad ballot design by providing a "technological fix" for this issue: overvote protection.

HAVA's mandate for overvote protection and the purchase of new voting technology contributed to a national reduction in overvotes. [24] But not all jurisdictions are doing equally well in reducing lost votes due to overvoting.

The plaintiffs in *NAACP New York State Conference v. New York State Board of Elections* alleged that New York did not fully satisfy HAVA's requirements for adequate overvote notification. [25] As predicted, there were tens of thousands more lost votes due to overvoting than there should have been. A review of overvote data and overvote protection practices from around the country shows that New York is not alone. In Florida in 2008, 13 counties used the same overvote protections and machines as were used in New York in 2010. The result in Florida was the same as in New York: dramatically higher overvote rates, with over 12,000 overvotes in the presidential contest alone.[26] More than one in every 200 people who cast their votes in these counties on Election Day lost their votes for president.[27] This was a rate five times greater than the rest of the State, where better overvote protections existed.[28]

Moreover, as in New York, racial and ethnic minorities were disproportionately harmed by the lack of adequate overvote protections. For instance, it is estimated that in Miami-Dade County, Hispanic voters were more than 50% likely to lose votes due to overvoting than non-Hispanic Whites, while African-American voters were more than five times as likely to lose votes for this reason.[29]

Similarly, several counties in Ohio in 2010 saw overvote rates of over 0.5% in the governor's contests; in other words, more than one in 200 voters lost their votes due to ovevoting.[30] The high overvote rate was partly the consequence of confusing instructions for the governor's contest; the ballot stated, "select the joint candidates of your choice," and may have caused some voters to believe they could vote for more than one candidate for governor.[31] But for many who overvoted on Election Day, the "warning" message they received from the voting system probably did not help ensure that they corrected their ballots.

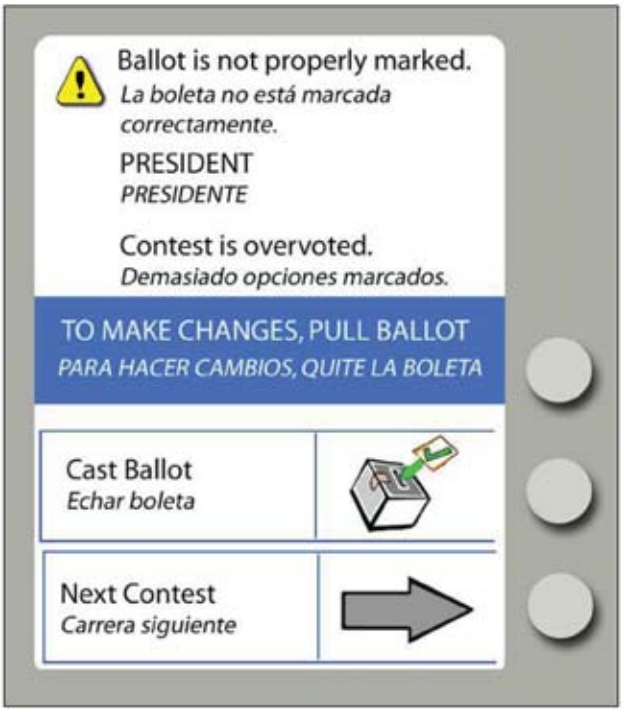


It is easy to see how this message could confuse voters into voiding their votes by pressing the "Accept" button. The message does not tell the voter what she is "accepting" or that as a consequence of pressing "Accept," she will lose her vote.

Most counties in Ohio do not publish data on overvotes. But by examining the six counties that did so for the 2010 election, we can discern the negative impact of inadequate overvote protections. In Allen, Clermont, Cuyahoga, and Lawrence counties, all of which used similar overvote messages and procedures, the overvote rates for voters who voted by mail (with no overvote protection) and those who voted on voting machines were similar. In other words, it seems the "overvote protection" afforded by these voting machines did little to actually reduce the overvote rate on Election Day.

Ohio County	Election Day Overvote Rate 2010 Gov. Race	Absentee Overvote rate in 2010 Gov. Race
Lawrence	1.19%	1.09%
Allen	0.78%	1.01%
Cuyahoga	0.53%	0.57%

By contrast, Hamilton and Williams counties in Ohio used a different machine, with a different message and overvote procedure.



The overvote rates for voters who voted on Election Day in these counties was dramatically lower than for those who voted by mail without the overvote protections offered by a voting machine. The improved overvote protections also resulted in lower Election Day overvote rates than in Lawrence, Allen, Cuyahoga and Clermont counties.

Ohio County	Election Day Overvote Rate 2010 Gov. Race	Absentee Overvote rate in 2010 Gov. Race
Hamilton	0.23%	0.47%
Williams	0.14%	0.74%

In contrast to the other Ohio counties, the overvote rate for ballots cast on machines in Hamilton County was less than 50% of what it was for absentee ballots, and in Williams County, the rate for machine cast ballots was less than 20% what it was for absentee ballots. There are likely many factors which led to lower overvote rates in these counties, but the plain language in the message ("ballot is not properly marked"; "to make changes, pull ballot") would certainly have helped.

As in Florida and New York, the lack of good overvote protections appears to have disproportionately impacted racial minorities. An analysis provided by Professor Kimball and annexed to this report as Appendix F shows that African-Americans were approximately three times as likely as non-African Americans to lose their votes due to overvoting in Cuyahoga County in 2010 . More than one in one-hundred African Americans lost their vote for governor due to overvoting in 2010.

It is impossible to know the total national impact of poor overvote protections in the United States. The Election Assistance Commission no longer asks jurisdictions to provide overvote data. Nor do most states.

Still, as the recent examples of Florida, Ohio and New York show, overvoting remains a significant problem in some jurisdictions. And the limited additional data we have tells us the problem is not confined to these three states. Professors Kimball and Kropf collected overvote data from at least a few counties in 8 different states in 2008. In 4 of them (Illinois, Arkansas, Florida and Iowa) at least one county had overvote rates of more than 0.4% in the presidential contest, with East St. Louis County, Illinois reporting the highest rate at 1.37%.[32]

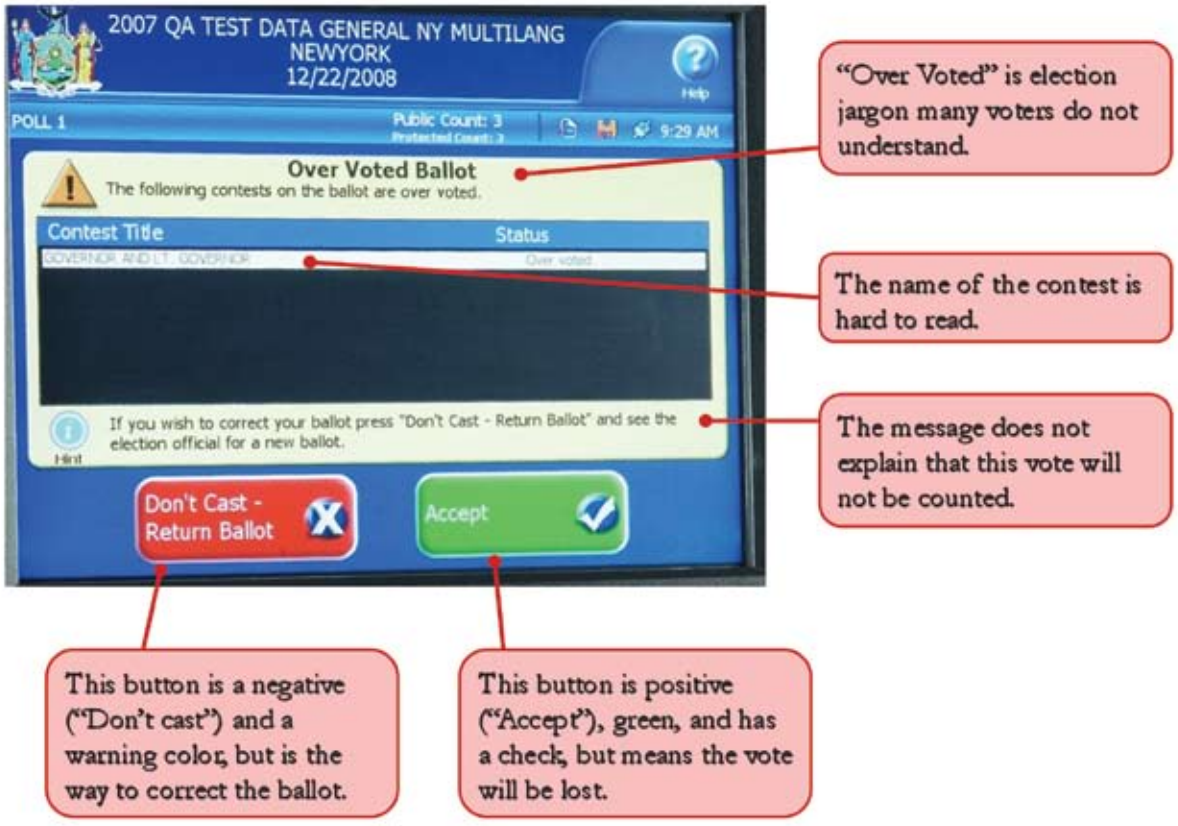
The solutions for these problems are largely the same as they are in New York:

1. Clearer and more accessible overvote protections on optical scan machines;
2. Better reporting of overvote data from counties and states (the vast majority of jurisdictions do not report this data);
3. A mandate to investigate and address high overvote rates;
4. Public access to ballots and overvote data to ensure problems are addressed; and
5. Better ballot design.

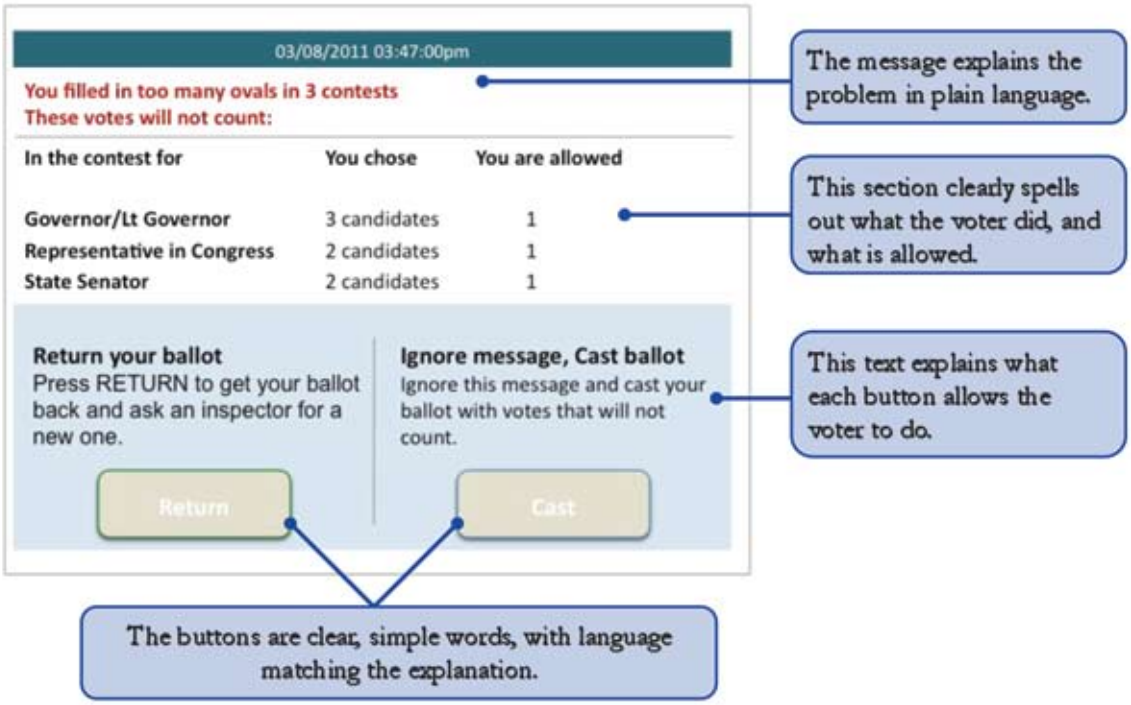
Appendix A: New York Overvote Message

An "overvote" is recorded by New York's voting machines when a voter has selected more candidates than allowed. Overvotes do not count. They are almost always unintentional. Under federal and New York law, voting machines must warn a voter if her ballot is overvoted, inform her of the consequences of casting a ballot with overvoted contests (her choices in those contests will not count), and give her an opportunity to correct her ballot to ensure all of her choices are counted.

<u>Current New York Overvote Message:</u> As alleged in a federal lawsuit,[1] this message is full of election jargon and gives voters misleading cues about their options.



<u>Proposal for New Message:</u> states the problem clearly and offers an explanation of the voter's options.



As alleged in a federal lawsuit, *NAACP New York State Conference v. New York State Board of Elections,*[2] the 2010 overvote message in New York City and elsewhere in the state used election jargon ("Over Voted Ballot") without explaining its meaning. It did not explain in plain language that the voter had selected too many candidates and that, as a result, her selections in the overvoted contests would not count unless the ballot was corrected. Counter-intuitively, the only way for an individual who had overvoted to correct the error was to select a red button marked with an "X" and labeled "Don't Cast." If the voter instead pressed the green "Accept" button, marked with a check, his or her vote in the overvoted contests would be voided.

The State Board of Election has recently agreed to introduce a less confusing overvote message. The new message will use plain language, free of election jargon. It will explain that the voter filled in too many ovals and specify which contests are overvoted. It will also eliminate the misleading green or red colors and other confusing signifiers (such as check marks) that could encourage voters to cast votes that will not be counted.

** Note that depending on the polling place, voting machines in New York provide voters with the option of receiving their messages in English, Spanish, Chinese or Korean. In 2012, certain polling places in Queens will also have messages available in at least one Asian Indian language as well.

Appendix B: Overvotes in New York City Election Contests

This appendix determines the total number of overvotes in New York City for each of the seven electoral races other than the gubernatorial election that were contested in every precinct in the city. It uses the same methodology as Table 1 to estimate overvotes; see Table 1 for a more complete description of each of the fields in the tables below. Adding up the overvotes in all eight races, there were a total of 18,958 overvotes cast in the 2010 election in these eight contests. The governor's race had the highest overvote rates of all eight contests considered here; the U.S. Senate two-year term election had the next highest overvote rates across all boroughs, while the state senate race had the lowest overvote rate among the eight contests.

- United States Senate (Six-Year Term)

	Observed # of Votes	Observed Overvote Rate	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.26%	174,613	455
Brooklyn	183,200	0.12%	394,057	473
Manhattan	339,138	0.06%	341,778	208
Queens	153,849	0.10%	337,366	344
Staten Island	94,892	0.09%	94,993	87
Totals	**944,064**	**0.10%**	**1,342,747**	**1,567**

- United States Senate (Two-Year Term)

	Observed # of Votes	Observed Overvote Rate	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.51%	174,613	899
Brooklyn	183,200	0.22%	394,057	852
Manhattan	339,138	0.18%	341,778	620
Queens	153,849	0.24%	337,366	800
Staten Island	94,892	0.19%	94,993	179
Totals	**944,064**	**0.26%**	**1,342,747**	**3,350**

- Comptroller

	Observed # of Votes	Observed Overvote Rate	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.36%	174,613	626
Brooklyn	183,200	0.12%	394,057	486
Manhattan	339,138	0.10%	341,778	351
Queens	153,849	0.12%	337,366	406
Staten Island	94,892	0.10%	94,993	97
Totals	**944,064**	**0.16%**	**1,342,747**	**1,966**

- Attorney General

	Observed # of Votes	Observed Overvote Rate	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.29%	174,613	511
Brooklyn	183,200	0.14%	394,057	551
Manhattan	339,138	0.08%	341,778	284
Queens	153,849	0.10%	337,366	344
Staten Island	94,892	0.11%	94,993	109
Totals	**944,064**	**0.14%**	**1,342,747**	**1,799**

- United States Representative

	Observed # of Votes	Observed Overvote Rate	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.27%	174,613	464
Brooklyn	183,200	0.07%	394,057	297
Manhattan	339,138	0.09%	341,778	321
Queens	153,849	0.11%	337,366	379
Staten Island	94,892	0.10%	94,993	99
Totals	**944,064**	**0.13%**	**1,342,747**	**1,560**

- State Senate

	Observed # of Votes	Observed Overvote Rate	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.19%	174,613	336
Brooklyn	183,200	0.06%	394,057	217
Manhattan	339,138	0.05%	341,778	161
Queens	153,849	0.09%	337,366	296
Staten Island	94,892	0.02%	94,993	22
Totals	**944,064**	**0.08%**	**1,342,747**	**1,032**

- State Assembly

	Observed # of Votes	Observed Overvote Rate	Total # of ED Votes	Estimated # of ED Overvotes
Bronx	172,985	0.32%	174,613	564
Brooklyn	183,200	0.06%	394,057	256
Manhattan	339,138	0.05%	341,778	161
Queens	153,849	0.04%	337,366	129
Staten Island	94,892	0.06%	94,993	61
Totals	**944,064**	**0.10%**	**1,342,747**	**1,171**

Appendix C: Overvotes Rates By County in New York State

This appendix provides data on overvote rates, by county, in the 2010 gubernatorial election in New York. The State Board of Elections provided (or directed us to) overvote data for 34 counties; there were 28 counties for which we were unable to obtain overvote data. The table below lists the counties for which information was available, along with the number of votes cast in 2010, the number of overvotes in the gubernatorial election, and the overvote rate; the number of overvotes recorded for the five New York City counties corresponds to the estimated number of overvotes in Table 1. In total, 0.40 percent of the ballots cast for governor in these 34 counties were overvoted.

	Total Votes	Overvotes in Governor's Race	Overvote Rate
Albany	98,918	273	0.28%
Bronx	174,613	1,572	0.90%
Broome	62,515	212	0.34%
Cayuga	21,445	82	0.38%
Chautauqua	36,390	132	0.36%
Chemung	23,621	118	0.50%
Chenango	13,349	51	0.38%
Cortland	12,802	62	0.48%
Delaware	13,161	51	0.39%
Essex	12,060	39	0.32%
Genesee	16,989	34	0.20%
Greene	15,138	90	0.59%
Hamilton	2,667	7	0.26%
Kings	394,057	2,028	0.51%
Madison	20,337	88	0.43%
New York	341,778	1,188	0.35%
Orange	94,816	389	0.41%
Orleans	11,465	34	0.30%
Oswego	29,778	118	0.40%
Putnam	28,144	74	0.26%
Queens	337,366	1,403	0.42%
Richmond	94,993	322	0.34%
Rockland	85,725	215	0.25%
Schoharie	10,649	20	0.19%
Schuyler	5,552	21	0.38%
Seneca	10,224	24	0.23%
St. Lawrence	28,282	90	0.32%
Suffolk	401,272	844	0.21%
Sullivan	21,851	22	0.10%
Tioga	16885	22	0.13%
Ulster	53,208	90	0.17%
Warren	21,716	43	0.20%
Washington	17,003	36	0.21%
Yates	7,196	53	0.74%
Totals:	**2,421,133**	**9,669**	**0.40%**

Appendix D: Methodology

This appendix describes our data sources and the methodology we used to estimate the total number of overvotes in New York City and New York State. It also explains the ecological inference techniques used to estimate by-race overvote rates in each borough.

Data Sources

We obtained from the New York City Board of Elections the machine output for precincts in each of the city's five boroughs. For each election district, the output provides the number of votes cast for the candidates in each electoral race. The output also provides the total number of ballots cast in the precinct, as well as the number of undervotes – defined as the number of ballots where the voter did not mark a choice – and overvotes for each contest.

To calculate the overvote rate for each contest in a precinct, we divide the number of overvotes in that contest by the number of votes cast in that precinct. We then determine the demographic composition of each precinct using race data at the Vote Tabulation District (VTD) level from the 2010 Census.

The City Board of Elections, in providing us with the voting machine output, noted that output was "pre-recanvass" and "pre-certification." There may be errors in the output that the Board of Elections would have subsequently corrected during the recanvass and certification process. Accordingly, the results in this report should be interpreted with caution. However, in analyzing the output, we found only one obvious irregularity: a majority of precincts in Queens and Brooklyn yielded blank output. As we note throughout our report, the existence of blank output in so much of the city reaffirms our conviction that New York City – and, indeed, election administrators throughout the rest of the state and country – must maintain better precinct-level data on overvoting.

Estimating the Total Number of Overvotes

The number of machine overvotes for the entire city must be estimated, and cannot be extracted from the voting machine output, because the machine output is blank in many precincts. To estimate the total number of overvotes in the City, we multiply the observed overvote rate in each borough by the total number of votes cast, as reported by the New York State Board of Elections.

Our estimate of the total number of overvotes assumes that the overvote rate is the same in precincts with blank voting machine output as in precincts with populated output. In reality, this probably causes us to substantially underestimate the total number of overvotes in the City. Because the areas of the city with no overvote data have higher concentrations of voting-age Hispanics and blacks than the areas with overvote data, and because minorities are significantly more likely to overvote than white voters, our estimate of over 6,500 overvotes in the governor's contest and 19,000 across all contests is probably lower than the actual number of overvotes cast in the City in 2010.

About half of New York's counties did not produce overvote data. Several of the counties that did not produce such data were among those in which we might expect to see particularly large numbers of overvotes, including Erie, Monroe, Nassau and Westchester Counties. If we assume that the statewide average for overvotes was the same as New York City's, there would have been 23,000 overvotes in the governor's contest and approximately 60,000 overvoted contests in total. A more conservative estimate would look at counties from outside New York City that provided us with information. Using the overvote rate of 0.39 percent – the statewide average from the half of counties that provided information – we still end up with startlingly large numbers: 18,500 overvotes cast statewide in the governor's race and nearly 54,000 overvoted contests in all.[30]

Estimating By-Race Overvote Rates

Ecological inference is a widely accepted statistical technique used to infer individual-level behavior from aggregate data. The technique is commonly used in the Voting Rights Act context in order to determine the electoral preferences of different race groups; the analysis can ascertain, for instance, the fraction of blacks who voted Democrat or the fraction of whites who voted Republican. The application of ecological inference to overvote data is not procedurally any different: we use it to determine the fraction of each racial group in the five boroughs who overvoted in the gubernatorial contest.

From the Voting Rights Act context, the most reliable court-accepted ecological inference technique is known as King's EI, developed by Professor Gary King at Harvard University.[31] The method has significant advantages over other ecological inference techniques because it is able to quantify the uncertainty associated with estimates and because it can be adapted to analyze areas where there are three racial groups of interest. We use King's EI to calculate all by-race estimates reported above.

It is worth noting that ecological inference is not an exact science, and no ecological inference technique will always provide accurate estimates. Nonetheless, the estimates provided by widely accepted ecological inference techniques like King's EI have been uniformly accepted by courts as the most accurate – and usually the only – way to assess racial voting patterns in other voting rights contexts. There is little reason to believe that those techniques ought to be any less acceptable for analyzing overvoting patterns.

It is also worth noting that ecological inference methods, like King's EI, are usually optimally conditioned for analyzing patterns among two dominant racial groups, but they can be modified to apply to areas of interest with three racial groups. The model, however, becomes extremely complex (and inaccurate) when more than three racial groups are introduced; this is why Asian voters were excluded from the analysis. The exclusion of Asian voters might pose accuracy problems in Queens, where 22.9 percent of the population is Asian. The careful reader would do well to approach the overvote estimates in Queens with caution.

We were unable to estimate the overvote rate for Hispanics and blacks in Staten Island because King's EI was unable to come up with a single estimate that respected the required mathematical bounds for the overvote rate. We suspect that because overvote rates are usually so small, King's EI requires more information from the data than it does in its usual Voting Rights Act applications in order to

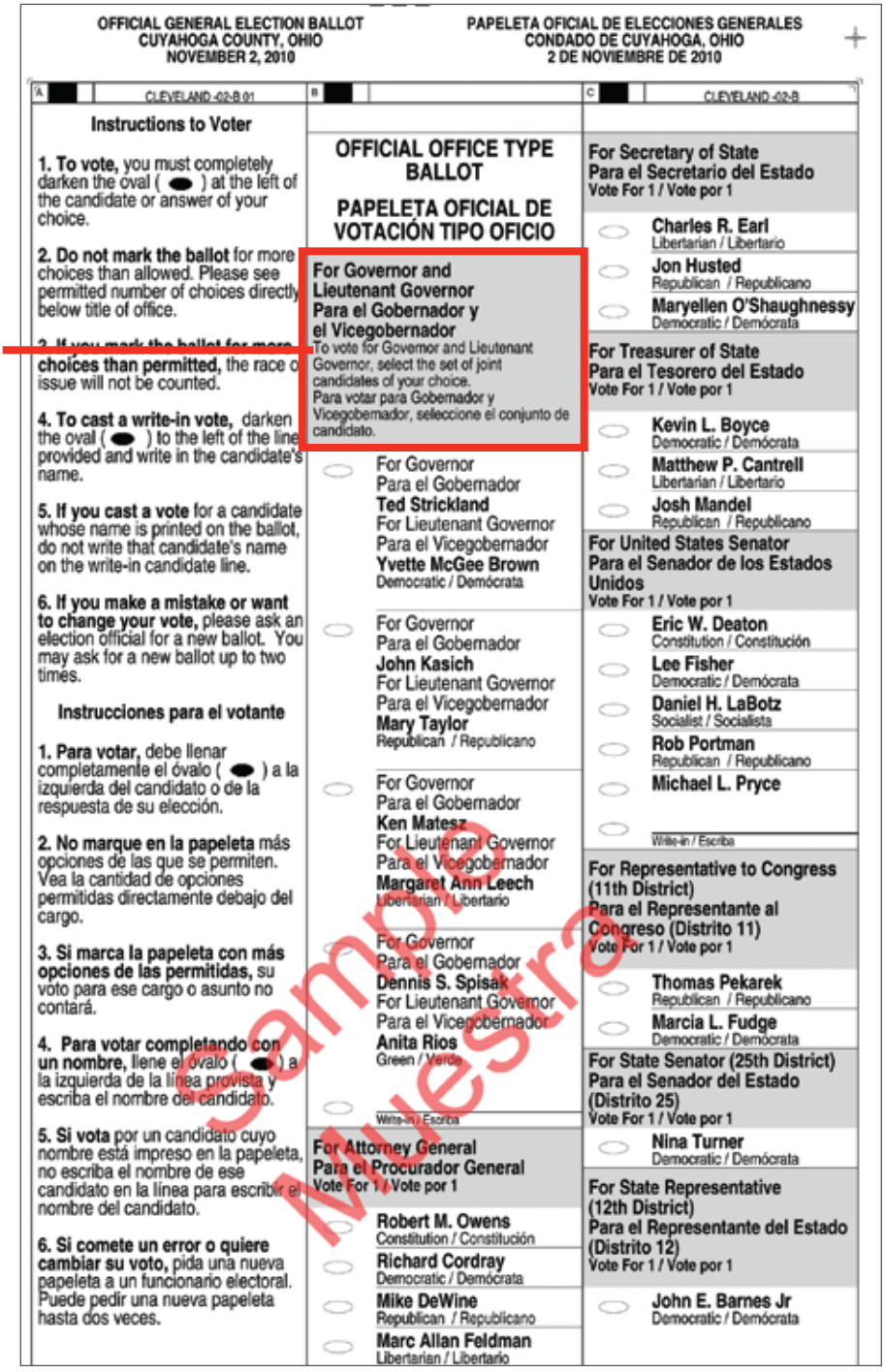
make inferences about overvote rates. Together with the relatively small black and Hispanic voting-age population in Staten Island, the low levels of turnout among blacks and Hispanics on Staten Island suggest that there were not enough actual black and Hispanic voters in Staten Island for King's EI to accurately estimate the overvote rates for these two groups.

The table below displays the by-race overvote estimates for each borough in New York City; the estimates in red were reported in Table 7. The numbers in parentheses represent the bounds of the 95 percent confidence interval for each estimate.

	White	Black	Hispanic
Bronx	0.55% (0.11, 0.95)	1.08% (1.01, 1.14)	1.28% (1.13, 1.44)
Brooklyn	0.35% (0.28, 0.41)	0.63% (0.55, 0.70)	1.37% (0.80, 1.82)
Manhattan	0.20% (0.16, 0.27)	0.82% (0.54, 1.08)	0.91% (0.79, 1.02)
Queens	0.24% (0.18, 0.30)	0.64% (0.12, 1.25)	1.37% (1.30, 1.48)
Staten Island	0.21% (0.16,0.28)	***	***

Appendix E: Cuyahoga County Ballot, November 2

Poorly worded instructions in the governor's contest may have caused some voters to believe they could vote for more than one candidate.



OFFICIAL GENERAL ELECTION BALLOT
CUYAHOGA COUNTY, OHIO
NOVEMBER 2, 2010

PAPELETA OFICIAL DE ELECCIONES GENERALES
CONDADO DE CUYAHOGA, OHIO
2 DE NOVIEMBRE DE 2010

A CLEVELAND -02-B 01

Instructions to Voter

1. To vote, you must completely darken the oval (⬬) at the left of the candidate or answer of your choice.

2. Do not mark the ballot for more choices than allowed. Please see permitted number of choices directly below title of office.

3. If you mark the ballot for more choices than permitted, the race o issue will not be counted.

4. To cast a write-in vote, darken the oval (⬬) to the left of the line provided and write in the candidate's name.

5. If you cast a vote for a candidate whose name is printed on the ballot, do not write that candidate's name on the write-in candidate line.

6. If you make a mistake or want to change your vote, please ask an election official for a new ballot. You may ask for a new ballot up to two times.

Instrucciones para el votante

1. Para votar, debe llenar completamente el óvalo (⬬) a la izquierda del candidato o de la respuesta de su elección.

2. No marque en la papeleta más opciones de las que se permiten. Vea la cantidad de opciones permitidas directamente debajo del cargo.

3. Si marca la papeleta con más opciones de las permitidas, su voto para ese cargo o asunto no contará.

4. Para votar completando con un nombre, llene el óvalo (⬬) a la izquierda de la línea provista y escriba el nombre del candidato.

5. Si vota por un candidato cuyo nombre está impreso en la papeleta, no escriba el nombre de ese candidato en la línea para escribir el nombre del candidato.

6. Si comete un error o quiere cambiar su voto, pida una nueva papeleta a un funcionario electoral. Puede pedir una nueva papeleta hasta dos veces.

B

OFFICIAL OFFICE TYPE BALLOT

PAPELETA OFICIAL DE VOTACIÓN TIPO OFICIO

For Governor and Lieutenant Governor
Para el Gobernador y el Vicegobernador
To vote for Governor and Lieutenant Governor, select the set of joint candidates of your choice.
Para votar para Gobernador y Vicegobernador, seleccione el conjunto de candidato.

For Governor / Para el Gobernador **Ted Strickland**
For Lieutenant Governor / Para el Vicegobernador **Yvette McGee Brown**
Democratic / Demócrata

For Governor / Para el Gobernador **John Kasich**
For Lieutenant Governor / Para el Vicegobernador **Mary Taylor**
Republican / Republicano

For Governor / Para el Gobernador **Ken Mattesz**
For Lieutenant Governor / Para el Vicegobernador **Margaret Ann Leech**
Libertarian / Libertario

For Governor / Para el Gobernador **Dennis S. Spisak**
For Lieutenant Governor / Para el Vicegobernador **Anita Rios**
Green / Verde

Write-in / Escriba

For Attorney General
Para el Procurador General
Vote For 1 / Vote por 1

Robert M. Owens
Constitution / Constitución

Richard Cordray
Democratic / Demócrata

Mike DeWine
Republican / Republicano

Marc Allan Feldman
Libertarian / Libertario

C CLEVELAND -02-B

For Secretary of State
Para el Secretario del Estado
Vote For 1 / Vote por 1

Charles R. Earl
Libertarian / Libertario

Jon Husted
Republican / Republicano

Maryellen O'Shaughnessy
Democratic / Demócrata

For Treasurer of State
Para el Tesorero del Estado
Vote For 1 / Vote por 1

Kevin L. Boyce
Democratic / Demócrata

Matthew P. Cantrell
Libertarian / Libertario

Josh Mandel
Republican / Republicano

For United States Senator
Para el Senador de los Estados Unidos
Vote For 1 / Vote por 1

Eric W. Deaton
Constitution / Constitución

Lee Fisher
Democratic / Demócrata

Daniel H. LaBotz
Socialist / Socialista

Rob Portman
Republican / Republicano

Michael L. Pryce

Write-in / Escriba

For Representative to Congress (11th District)
Para el Representante al Congreso (Distrito 11)
Vote For 1 / Vote por 1

Thomas Pekarek
Republican / Republicano

Marcia L. Fudge
Democratic / Demócrata

For State Senator (25th District)
Para el Senador del Estado (Distrito 25)
Vote For 1 / Vote por 1

Nina Turner
Democratic / Demócrata

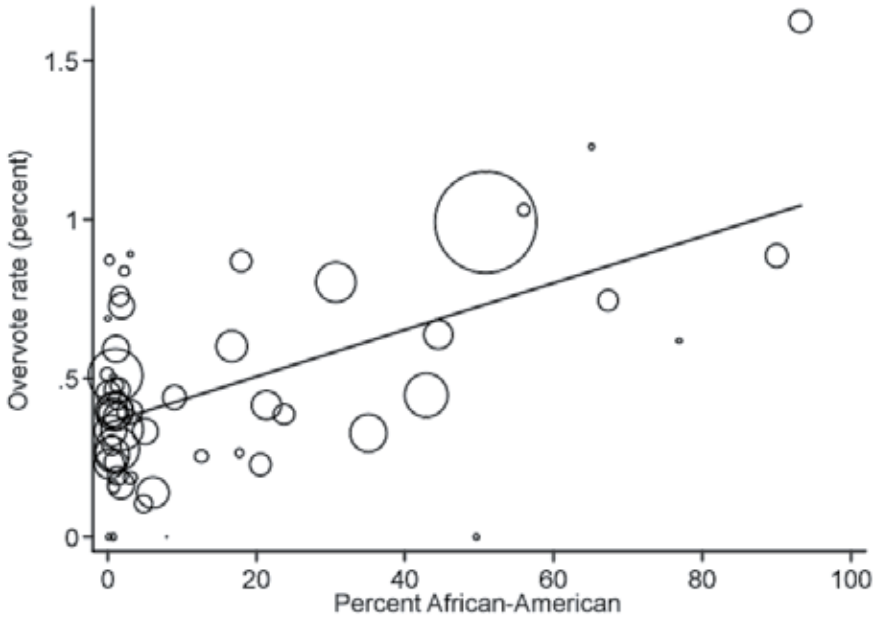
For State Representative (12th District)
Para el Representante del Estado (Distrito 12)
Vote For 1 / Vote por 1

John E. Barnes Jr
Democratic / Demócrata

Sample
Muestra

Appendix F: Overvoting in Cities of Cuyahoga County in Gubernatorial Election of 2010, Analysis by Professor David C. Kimball, University of Missouri-St. Louis

The graph below shows the overvote rate by the percentage of black voters in each of the 58 cities in Cuyahoga County. The size of each circle is in proportion to the number of voters in each city. The graph shows that the overvote rate is higher in largely African-American cities.



The relationship between race and overvotes holds even when controlling for the residual vote rate in the 2006 gubernatorial election. For each 10% increase in the African-American percentage of voters in a city, the overvote rate increases, on average, 0.1 percentage points.

For each 10% increase in the Hispanic percentage of voters in a city, the overvote rate increases, on average, 0.05 percentage points. Both of these effects are statistically significant.

Homogeneous City Analysis

- In cities that are more than 80% African-American, the overvote rate is 1.3% (2 cities).
- In cities that are less than 20% African-American, the overvote rate is 0.4% (43 cities).
- In cities that are more than 90% African-American, the overvote rate is 1.3% (2 cities).
- In cities that are less than 10% African-American, the overvote rate is 0.4% (39 cities).

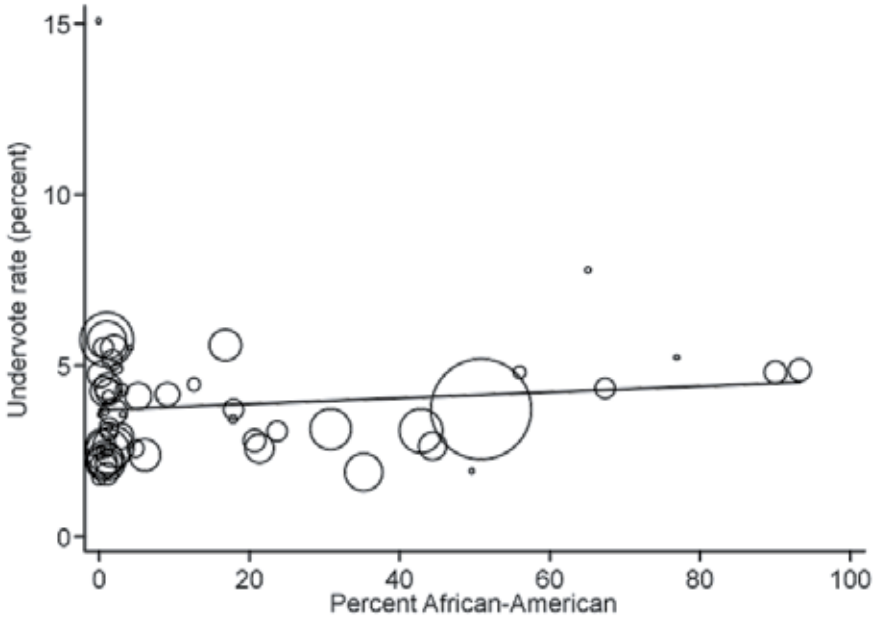
Ecological Regression Estimates

- Estimated Election Day overvote rate for African-American voters: 1.1%
- Estimated Election Day overvote rate for non-African-American voters: 0.4%

Ecological Inference Estimates

- Estimated Election Day overvote rate for African-American voters: 1.3%
- Estimated Election Day overvote rate for non-African-American voters: 0.4%

Meanwhile, there is little relationship between race and undervotes in the 2010 gubernatorial election (see figure below).



ENDNOTES

1. NAACP N.Y. State Conference v. New York State Board of Elections, No. 10-02950 (E.D.N.Y. filed June 28, 2010).

2. Amended Complaint at 11-12, NAACP N.Y. State Conference v. N.Y. State Bd. of Elections, No. 10-02950 (E.D.N.Y. filed June 28, 2010), *available at* http://brennan.3cdn.net/d2ac87eb9e0e39e243_xum6bg6jw.pdf.

3. HAVA allows an exception to this rule for states or jurisdictions that use a paper ballot voting system, a punch card voting system, or a central count voting system by "(i) establishing a voter education program specific to that voting system that notifies each voter of the effect of casting multiple votes for an office; and (ii) providing the voter with instructions on how to correct the ballot before it is cast and counted (including instructions on how to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error)." Help America Vote Act (HAVA) of 2002 § 301(a)(1)(B), 42 U.S.C.A. § 15481(a)(1)(B) (West 2011).

4. *NAACP N.Y. State Conference,* No. 10-02950 (E.D.N.Y. filed Jun. 28, 2010).

5. *Id.*

6. *Id.*

7. In producing this data, the City noted that the vote totals were "pre-recanvass and pre-certification" and did "not reflect corrections that are made when, for example, [data from a machine] was not read . . . or . . . was erroneously read twice." As explained in more detail in Appendix B to this report, the Brennan Center took what steps it could to account for these problems in the data. Unless otherwise specified, all overvote totals in this report refer to ballots cast on voting machines only. We did not include absentee ballots in this review.

8. As discussed *infra* at 12 and 16 data provided by the City and other counties was incomplete, but was sufficient for the Brennan Center to have confidence in the key findings discussed herein.

9. The higher turnout in presidential elections is not the only explanation for higher overvote numbers in presidential elections. Midterm elections tend to attract more experienced voters. In addition to these experienced voters, presidential elections also attract infrequent voters, who would be more likely to overvote. Compared to midterm elections, presidential elections also tend to attract more voters from poorer communities—the voters who are most likely to overvote.

10. *See generally* Lawrence Norden et al., Brennan Center for Justice at NYU School of Law, Better Ballots (2008), *available at* http://www.brennancenter.org/content/resource/better_ballots/; David C. Kimball & Martha Kropf, *Ballot Design and Unrecorded Votes on Paper-Based Ballots*, 69, Public Opinion Quarterly, 508, 524 (2005), *available at* http://www.umsl.edu/~kimballd/kkpoq05.pdf; Michael C. Herron & Jasjeet S. Sekhon, *Overvoting and Representation: An Examination of Overvoted Presidential Ballots in Broward and Miami-Dade Counties*, (2001), *available at* http://elections.berkeley.edu/election2000/HerronSekhon.pdf.

11. *See* Sandra Ferguson Chance & Colleen Connolly-Ahern, *A Vote of Confidence? Florida's Public Records Law and the 2000 Presidential Election Recounts: Could it Happen in any Other State?,* 13 U. Fla. J.L. & Pub. Pol'y 135, 147-48 (2001) (describing a study developed by eight news organizations surveying forty-nine states' public information laws as they related to executed ballots). State officials in thirteen states decisively noted that they considered both executed ballots and absentee ballots public records, whereas four states characterized the status of both their voted and absentee ballots as "unclear." *Id.* at 150.

12. N.Y. Elec. Law § 3-222 allows access to paper ballots and voting machine data pursuant to a court order. However, case law suggests that only candidates disputing election outcomes are entitled to seek such an order. *See, e.g., In re Barrett*, 204 N.Y.S. 705, 707 (N.Y. App. Div. 1924) ("The examination of the ballots provided for in all these enactments was not a step in a recanvass of the ballots, but was *for the purpose of furnishing to a candidate* the best existing evidence of the actual vote at the election which might be available for use in subsequent legal proceedings.") (emphasis added).

13. Norden et al., *supra* note 10, at 62.

14. About half of New York's counties did not produce overvote data. If we assume that the statewide overvote rate was the

same as New York City's, there would have been 23,000 overvotes in the governor's contest and approximately 60,000 overvoted contests in total. A more conservative estimate would use the overvote rate counties from outside New York City that provided us with information. Using the overvote rate of 0.40 percent – the statewide average from the counties that provided information – we still arrive at startlingly large estimates: 18,500 overvotes cast statewide in the governor's race and nearly 54,000 overvoted contests in all.

15. Adding the number of absentee ballot overvotes to the machine overvotes, there were 7,006 total overvotes in New York City in the 2010 gubernatorial election alone.

16. Nassau County provided the Brennan Center with unaggregated overvote data; the data was presented across several thousand printed pages. Other counties using their same voting system provided this information electronically, which made totaling overvotes far easier. Erie, Monroe and Westchester counties did not provide us with any data.

17. U.S. Election Assistance Comm'n, 2004 Election Day Survey Report Overvotes and Undervotes 8-10, *available at* http://www.eac.gov/assets/1/AssetManager/2004%20EAVS%20Chapter%208.pdf.

18. David Kimball & Martha Kropf, Data on Voting in 2008 Presidential Election by County (2008) (unpublished data set) (on file with the Brennan Center).

19. E-mail from Lawrence Norden, Deputy Director, Brennan Center for Justice, to Stephen Kitzinger, City of N.Y. Law Dep't (Oct. 6, 2011) (on file with the Brennan Center); email from Lawrence Norden, Deputy Director, Brennan Center for Justice, to Lisa Dell & Joel Graber, N.Y. State Attorney General's Office, and Paul Collins & Kimberly Galvin, N.Y. State Bd. of Elections (Oct. 7, 2011) (on file with the Brennan Center).

20. As explained in greater detail in Appendix D, the methods used to estimate by-race overvote rate cannot accommodate analysis for more than three racial groups. Therefore, we did not estimate the overvote rate among Asian voters.

21. We were unable to calculate the overvote rate for black and Hispanic voters in Staten Island because there was not enough data on black and Hispanic voters to permit accurate statistical inference.

22. *See generally* Norden et al., *supra* note 10; Herron & Sekhon, *supra* note 10.

23. *See generally* Norden et al., *supra* note 10.

24. Stephen Ansolabehere & Charles Stewart III, *Voting Technology and Uncounted Voted in the United States* (2002), *available at* http://web.mit.edu/cstewart/www/papers/residual_vote_old.pdf.

25 Amended Complaint, *supra* note 2, at 20.

26. Mary K. Garber, Fla. Fair Elections Ctr., Examining Florida's High Invalid Vote Rate in the 2008 General Election, Part 1: How Voting System Design Flaws Led to Lost Votes 11 (2009), *available at* http://www.ffec.org/documents/Invalid_Vote_Report_Revised_23June2009.pdf.

27. *Id.* at 10.

28. The overvote rate in the 13 Florida counties that used this message and overvote procedure was 0.54%; the overvote rate in the 54 counties that did not use the message and procedure was 0.10%. Div. of Elections, Fla. Dep't of State, General Over Undervote (2008), *available at* http://doe.dos.state.fl.us/reports/pdf/generalOverUndervote08.pdf.

29. Amended Complaint, *supra* note 2, at 16.

30. Further discussed *infra* at 24.

31. *See* Appendix E.

32. Kimball & Kropf, *supra* note 18.

[33] In order to obtain an estimate of 54,000 overvotes across all contests in the state, we use the observed ratio of total overvotes across all contests to governor's overvotes in New York City, multiplying that ratio by our estimate of the total number of governor's contest overvotes statewide. We use the New York City observed ratio because we anticipate that the ratio would be roughly equivalent from county to county. Though that ratio might vary based on the total number of contests on the ballot in each county, we determined by preliminarily examining sample ballots from 23 New York counties that the number of contests on each ballot – between 10 and 14 in nearly every county we examined – roughly mirrors the number of contests on the ballot in each of the City's boroughs.

[34] *See* Gary King, *A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data*, Princeton UP (1997).

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