

Voter Competence with Cumulative Voting*

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Objective. This article evaluates the voting experience in the first election using cumulative voting for the Board of Trustees in Port Chester, New York. A growing number of local jurisdictions in the United States are using cumulative voting for multimember elections. While the Port Chester election included some other new features in addition to cumulative voting, the village implemented an extensive voter education program to prepare voters and candidates for the election. *Methods.* We conducted an exit poll of 1,946 Port Chester voters in June 2010, more than half of the voters in the local election. We used a variety of survey questions to measure voting experience and voting behavior. We also examined election returns for Port Chester, including the 2010 and 2013 elections using cumulative voting. *Results.* We find that the voter education program helped inform residents about casting a ballot with cumulative voting. Port Chester voters, and Hispanic voters in particular, reported a positive experience in the 2010 election. A large majority of voters also indicated that they understood cumulative voting and cast all of the votes allotted to them. Finally, we find evidence of strategic use of cumulative voting in order to help elect a candidate of one's choice. *Conclusions.* Our results indicate that voters are capable of effectively participating in elections with cumulative voting. Communities that are weighing the adoption of cumulative voting for local elections should also be prepared to implement a parallel voter education effort.

The history of the Voting Rights Act (VRA) is long and complex (see, for example, Keyssar, 2000, and the 2013 Supreme Court decision striking down one provision of the Act in the *Shelby County* case). However, as part of the 1982 amendments and extension of the Act, the Department of Justice can identify discriminatory voting practices based on effects rather than intent. Section 2 of the Act states that a violation has occurred when “based on the totality of circumstances, it is shown that the political processes leading to nomination or election in the State or political subdivision are not equally open to participation by members of a class of citizens protected by subsection (a) of this section in that its members have less opportunity than other members of the electorate to participate in the political process and to elect representatives of their choice.”¹ In many localities legal challenges of at-large voting systems under Section 2 of the VRA have prompted changes to alternative election mechanisms. There is a growing body of evidence examining whether voters, particularly minority voters, understand these new electoral institutions and vote strategically to elect their preferred candidates to local governments.

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¹The Voting Rights Act of 1965 (as amended in 1982) §2 42 U.S.C. §1973.

We analyze the VRA remedy recently adopted for local elections in Port Chester, New York—cumulative voting (CV). As part of a federal consent decree, Port Chester implemented an extensive voter education program prior to the first election with CV, a new and distinctive feature in this type of case. Using an original exit poll of Port Chester voters in 2010, we examine the usability of the CV system. We find that the voter education program helped inform residents about casting a ballot with CV. Port Chester voters, and Hispanic² voters in particular, report a positive experience in the 2010 election. A large majority of voters also indicated that they understood CV and showed that they knew how to cast all of the votes allotted to them. We also find evidence of strategic use of the CV system in order for voters to select a “candidate of their choice.”

Background on the Port Chester Case

In late 2006, the U.S. Department of Justice (DOJ) filed a VRA lawsuit against Port Chester charging that the at-large system used to select the six-member Board of Trustees gave Hispanic citizens a much smaller chance than white non-Hispanic citizens of electing candidates of their choice. In fact, no Hispanic individual had ever been elected although almost half the population and almost one-fourth of the registered voters in Port Chester are Hispanic. Furthermore, in keeping with the amended Section 2 language (totality of circumstances), the DOJ charged that there was cohesive voting on the part of the Hispanic community, that non-Hispanic whites were vetoing their choices, and that there was a history of “official discrimination” against Hispanics on the part of the state and Westchester County, in which Port Chester is located.³ In early 2008, the court decided against Port Chester.

Port Chester is bounded by Long Island Sound to the south and the Byram River (and Connecticut border) to the east. Figure 1 shows a map of Port Chester, indicating the Hispanic share of registered voters in each precinct. Hispanic voters tend to be more concentrated in the southeastern precincts and less concentrated in the northern precincts. However, Hispanic voter registration is at least 5 percent in each precinct and Hispanic voters are not heavily concentrated (above 50 percent) in any precinct. This population distribution complicates drawing single-member districts with an eye toward ensuring Hispanic representation.

In the consent decree to resolve the case, U.S. District Judge Stephen C. Robinson, the DOJ, and the village agreed that Port Chester would use CV to elect the Board of Trustees in 2010, 2013, and 2016, with each trustee serving a three-year term.⁴ In the past, terms were staggered so that only two seats on the Board of Trustees were contested in a given election. The consent decree required all six seats to be contested in the same election. The consent decree also required Port Chester to provide for early voting in

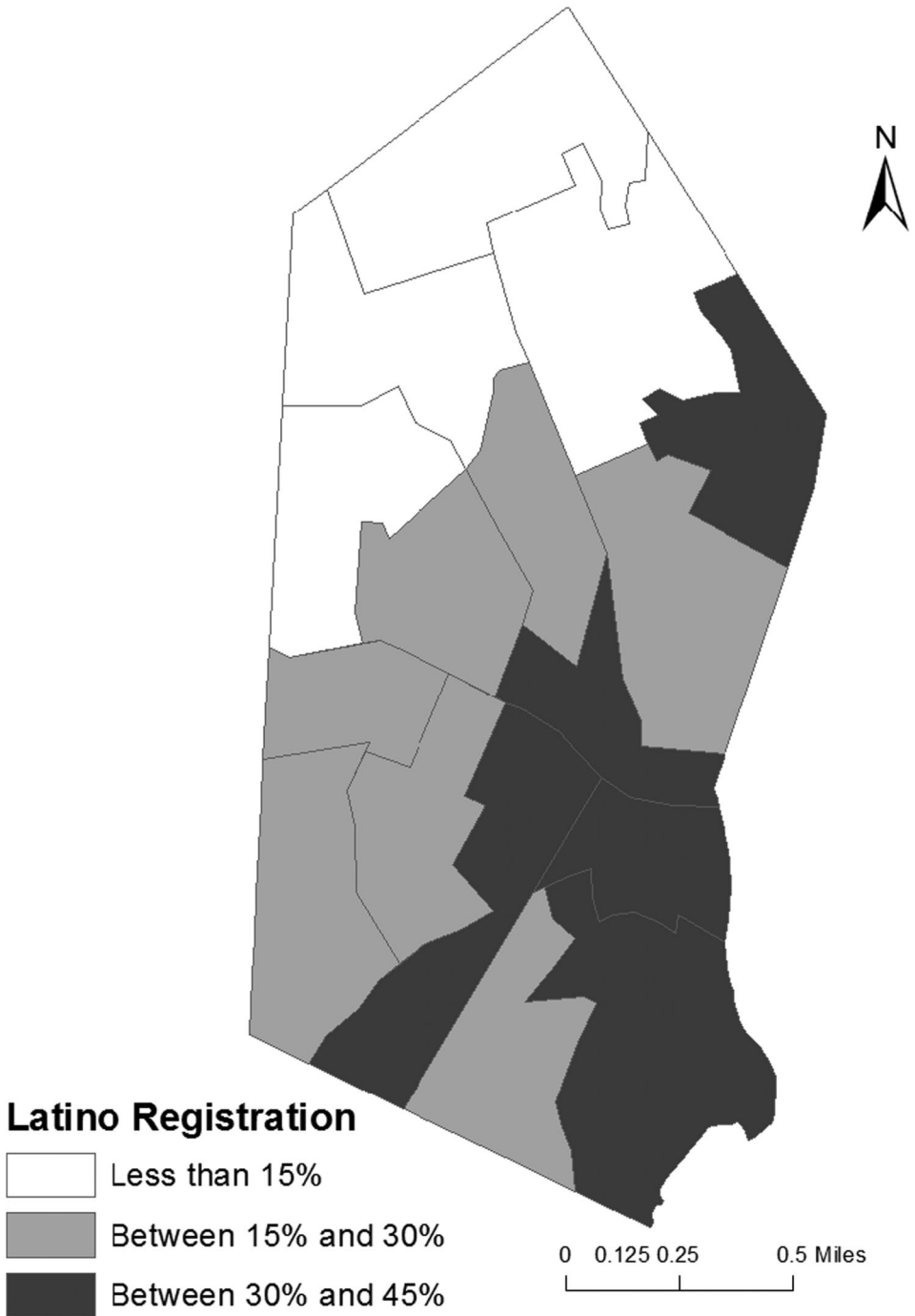
²While political science/social science literature uses the term “Latino,” here “Hispanic” is used because that is the term employed by the DOJ in a variety of court documents in this particular case. Many of the Hispanic individuals living in Port Chester are of South American descent.

³See *United States of America v. Village of Port Chester*, Complaint 06 Civ. 15173.

⁴Municipal elections in Port Chester are typically held in March; however, the introduction of CV in 2010 took place in a June election scheduled at the end of the public school calendar. The future of CV in Port Chester is somewhat uncertain after the consent decree expires. Judge Robinson retired from the federal bench in August 2010. In February 2011, the Republican majority on the Board of Trustees voted to appeal the federal court ruling against the village that instituted CV (Semple, 2011). The U.S. Court of Appeals for the Second Circuit rejected the appeal. In the March 2013 mayoral election, incumbent Dennis Pilla (a CV supporter) was defeated in a competitive race. It is unclear whether a majority of trustees will continue to support CV in Port Chester after 2016.

FIGURE 1

Latino Share of Registered Voters in Port Chester Election Districts, 2010



Board of Trustees elections, something new to New York. Finally, the consent decree required the village to mount an effort to educate voters about CV, early voting, and other features of the new Board of Trustees election and evaluate the voter education effort.

The extensive voter education program mandated by the court (titled “Port Chester Votes”) was developed with assistance from FairVote. Before the 2010 election, the village conducted 12 community presentations (six in English and six in Spanish) to explain CV and other election procedures. Bilingual sample ballots and voting instructions were mailed to every registered voter in Port Chester. Public service announcements in English and Spanish were developed for local newspapers, television, and radio. Port Chester election officials coordinated local news coverage of CV in advance of the election. The village produced informational brochures on CV and the election process (“How to Vote with Cumulative Voting”) and distributed these at the community presentations and other public events. In addition, a newsletter on voter registration and CV was sent home with each student in Port Chester public schools. Port Chester hired additional staff to assist in these functions and to train poll workers for the election.⁵

Cumulative Voting

A growing body of scholarship examines the impact of electoral institutions on the ability of minority populations to elect candidates of their choice. The implicit assumption is often that the chosen candidate would be one that would descriptively represent the population. For example, Marschall, Ruhil, and Shah (2010) find that black representation has increased over time due to cities adopting single-member districting (SMD) plans, which enable black populations “to translate votes into seats.” They contend that district plans have a much lower threshold of exclusion, consistent with other scholarship on this issue (see also Bowler, Donovan, and Brockington, 2003). However, for districting plans to succeed in electing more minority candidates, among other factors, minority voters must be concentrated in proposed districts and they must vote as a bloc in order to overcome the threshold of exclusion (see, for example, Bowler, Donovan, and Brockington, 2003). Currently, courts are applying “strict scrutiny” to districting that is predominantly based on race (Bowler, Donovan, and Brockington, 2003:17); this may mean that courts will be less likely to prescribe districts as a remedy for vote dilution claims.⁶ Furthermore, recent studies have qualified the degree to which district elections increase minority representation over at-large elections at the local level (Trounstein and Valdin, 2008; Meier and Rutherford, 2014). Such circumstances may increase the appeal of cumulative voting plans to remedy VRA claims.

In CV, voters are given the same number of votes to cast as there are positions on the local council to fill. Voters may “aggregate” their votes by casting multiple votes for the same candidate, thereby expressing both preference and intensity of preference. For example, voters are allowed to give all of the available votes to one candidate, a practice known as “plumping.” With the ability to plump votes, a cohesive bloc is more likely to elect a candidate of its choice under CV (Brischetto and Engstrom, 1997; Guinier, 1994). Prior studies find that CV improves minority representation in elected offices at the local

⁵Many of the voter education materials are on the Port Chester Votes website (<http://portchestervotes.com/>).

⁶There are other potential problems with single-member districts. See Brockington et al. (1998) for a discussion.

level (e.g., Brockington et al., 1998; Bowler, Donovan, and Brockington, 2003).⁷ Cooper (2007) examines the mathematical properties of CV and concludes that it offers minority groups the potential to achieve proportional representation without unfairly advantaging minority groups. Brischetto and Engstrom (1997) note that CV is more likely to produce minority representation in local government when the minority voting population exceeds the threshold of exclusion, as in the following formula, where N is the number of positions to be filled (see also Engstrom, Taebel, and Cole 1989):

$$\text{Threshold} = \left(\frac{1}{N+1} \right) * 100$$

In the case of Port Chester, with six seats being contested on the Board of Trustees in 2010, the threshold of exclusion equals 14.3 percent. The Hispanic share of registered voters in Port Chester in 2010 was approximately 23 percent (Village of Port Chester, 2010, Exhibit 28)⁸, so CV would appear to be a viable method of improving Hispanic representation on the Board of Trustees.

However, a common concern with CV is that it may be difficult to use (Dunn, 1972). Voters are used to the task of voting once for a candidate, and giving them the option of casting more than one vote for a candidate may be confusing. In addition, for some local jurisdictions, the ballot layout for a CV election may look much different from what voters are used to seeing. Even in plurality elections, unusual ballot designs can cause voter confusion (e.g., Kimball and Kropf, 2005). One study finds high rates of undervoting when CV is introduced for local elections (Rausch, 2001). That is, perhaps due to confusion over how CV works, a substantial number of voters may fail to cast all the votes available to them.

Several studies indicate that fears about the complexity of CV are unfounded. As an example, Engstrom and Brischetto reported the results of 15 different exit polls conducted in Texas systems using CV in order to understand whether CV is too complex for voters. Their results indicate that those with lower education levels found CV easier to use (Engstrom and Brischetto, 1998). Other studies have found that voters report that CV is easy to use: both the minority population affected by the VRA lawsuit and the majority Anglo population. In the case of Native Americans (the Sisseton-Wahpeton Sioux) in South Dakota, not only did the minority and majority groups find it easy to use (compared to the previous voting system), but enough used it to elect a Native American to the Sisseton, South Dakota, School Board (Engstrom and Barrilleaux, 1991). Further, Cole, Engstrom, and Taebel (1990) and Cole and Taebel (1992) reported that minority voters found CV easy to use in the first election that it was used in Alamogordo, New Mexico, and in the subsequent election. While voters found CV more difficult in 1990 than in 1987 (in 1987, there was a large educational campaign), more voters utilized the option to plump their votes for a single candidate. Below we examine whether Port Chester voters had a similar positive experience with CV.

⁷Among possible limitations of CV, Brockington et al. (1998) note that “strategic burdens” in coordinating blocs of voters may be difficult. Brischetto and Engstrom (1997) note that CV is not designed to translate votes directly into seats in a proportional manner, which is why it is sometimes referred to as a semi-proportional system.

⁸See “Info Regarding Dept. of Justice Claim v. Village,” (http://www.portchesterny.com/Pages/PortChesterNY_Attorney/doj), last accessed December 18, 2013.

Methods

We examine voting returns from Port Chester elections (2010 and 2013) and an exit poll of voters in the 2010 election. Our target population for the exit poll was all Port Chester voters in the Board of Trustees election, and we created separate surveys for early voting (held at the Village Hall on June 8–12, 2010), Election Day voting (10 polling locations on June 15, 2010), and absentee voting by mail. All voters except for absentee voters were surveyed upon leaving the polling place, before they knew the outcome of the election. Each of the questionnaires was translated into Spanish. The overall response rate for the exit poll was 58 percent (AAPOR, 2015, response rate 2), which compares favorably to those produced by other exit polls used for similar purposes.⁹ The exit poll sample totals 1,946 (377 early voters, 1,541 Election Day voters, and 28 absentee voters).

We examine whether voters in Port Chester were able to use CV as intended to avoid vote dilution. If minority voters (here, Hispanic voters) are not able to understand CV, then they might fail to take full advantage of its features to achieve improved representation in local government. We evaluate usability along several dimensions in the 2010 election in Port Chester: (1) voter awareness and evaluations of the village's education program; (2) familiarity with CV, including the ballot instructions; (3) voter behavior in making full use of CV; and (4) the overall experience with the election.

Election Results

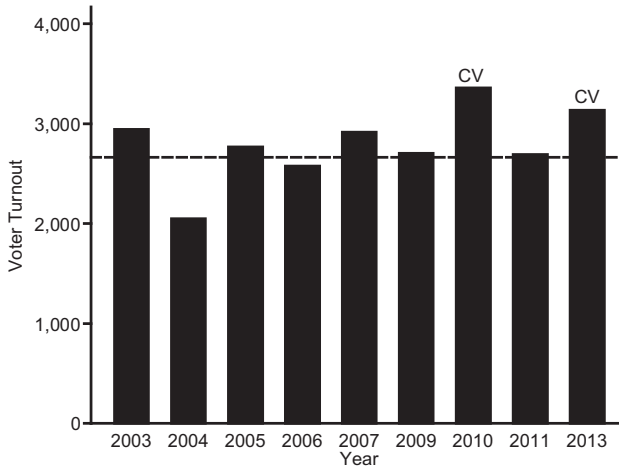
The 2010 election attracted 13 candidates for the six seats on the Board of Trustees. The election results suggest that CV in Port Chester was successful, in that the village seated its first-ever Hispanic trustee, Luis Marino (a Democrat). The same election produced the first elected African-American trustee, Republican Joseph Kenner, who had previously been appointed to the Board of Trustees. In 2013, Port Chester held a second Board of Trustees election with CV and a similar public education effort. With nine candidates running, the 2013 election saw the reelection of Hispanic and African-American incumbents and the election of another African American. Thus, both CV elections yielded increased diversity on the Board.

Furthermore, Port Chester voter turnout increased significantly in elections with CV. Figure 2 reports voter turnout in Port Chester elections over a decade, including the two recent elections with CV. As the chart indicates, turnout in each CV election was higher than in any prior non-CV election, roughly 20 percent higher than the average turnout in previous elections, which included competitive mayoral races in 2007, 2009, and 2011. While the totals in Figure 2 are not sufficient evidence for causal inference, they are consistent with prior research. For example, Bowler, Donovan, and Brockington (2001) find that CV boosts turnout in local elections by 5 percent, on average. Exit poll results suggest that minority residents were responsible for at least part of the increase in voter turnout in 2010. Only 5 percent of exit poll respondents reported that this was their first time voting in Port Chester. However, Hispanic and nonwhite voters were significantly more likely than non-Hispanic whites to be first-time voters in the 2010 election ($p < 0.001$).

⁹For information about the exit poll design, survey instruments, sample, response rates, and non-response analysis, as well as additional survey results, please see the online appendix at (www.umsl.edu/~kimball/CVSSQappendix.pdf). All appendices noted in this article are found online at this location.

FIGURE 2

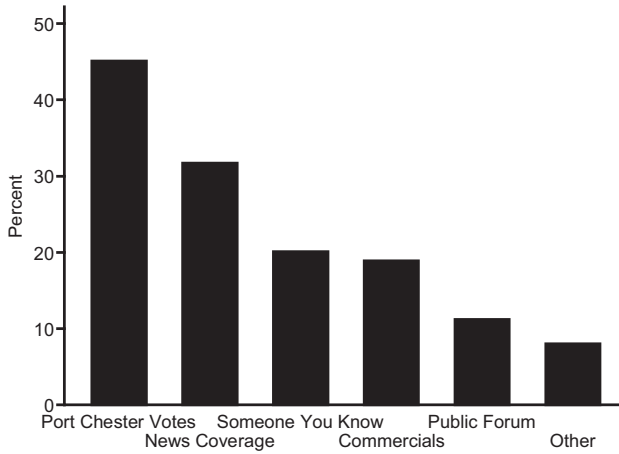
Voter Turnout in Port Chester Village Elections



NOTE: Years with CV elections are indicated above the bars. The dotted line indicates mean turnout in non-CV elections.

FIGURE 3

How Voters Learned About Cumulative Voting



Exit Poll Results

The exit poll included several questions to measure voter evaluations of the education campaign, as well as awareness and understanding of CV. Below we report responses to these questions, and, given the goals of CV, we compare white respondents to minority respondents. Voters noted a variety of sources of information about CV, consistent with the multifaceted voter education campaign implemented by Port Chester. As Figure 3 indicates, the most common source, noted by 45 percent of voters, was the Village’s Port

Chester Votes campaign. The second most common source was news coverage, mentioned by 32 percent of voters. The least commonly marked source, "Other" (noted by 8 percent of voters), included a variety of sources including some elements of the village's voter education program. These findings indicate that the voter education campaign was widely noticed.

In comparing racial and ethnic groups,¹⁰ there were no statistically significant differences in reporting Port Chester Votes, commercials, or people they know as sources of information about CV. White voters were less likely than other racial and ethnic groups to report learning about CV at community presentations. This is not surprising since the community presentations were designed to reach out to minority voters. White voters, and (to a lesser extent) African-American voters, were more likely than Hispanic voters to learn about CV from news coverage. We also find that older voters were more likely to learn about CV from news coverage and commercials, while younger voters were more likely to learn about it through word of mouth.

The exit poll included questions for voters to evaluate specific elements of the voter education program. Table 1 shows the percentage of each racial category that reported specific materials to be very helpful. Overall, voters who reported seeing the elements of the education campaign tended to rate each of those elements favorably. Written materials, particularly the "How to Vote with Cumulative Voting" handout, were rated by the most voters as very helpful or somewhat helpful. Fewer voters reported seeing the Port Chester Votes website or commercials on radio and television, and these elements were rated a bit less favorably than written materials. All of the voter education elements, except for the handout, were rated more positively by Hispanic voters than by non-Hispanic whites.

In addition to CV, early voting was another new feature in the 2010 Board of Trustees election in Port Chester. For the first time in New York, voters were allowed to vote in person at Village Hall during the week before the official Election Day. Thus, an additional part of the village's voter education program was to inform voters about their ability to vote early. In the election, 604 Port Chester residents voted early (approximately 18 percent of all voters in the election). In the exit poll, absentee and Election Day voters were asked: "Did you know that you could vote at Village Hall up to a week before Election Day?" Overall, 82 percent of the voters answered that they knew about early voting. In comparing racial and ethnic groups, African-American voters (70 percent) and Hispanic voters (75 percent) were less likely to report knowing about early voting than white voters (85 percent). These group differences are statistically significant. Nevertheless, Hispanic voters and African-American voters made up a larger share of the early voting sample (34 percent) than the Election Day sample (24 percent) in the exit poll data.

A final element of the voter education program was for poll workers to explain CV to voters on Election Day (and during early voting). Roughly half of the voters reported that they listened to the poll worker's explanation of CV, and three-quarters of those voters rated the poll worker description as "very easy" to understand. Hispanic voters (65 percent) and African-American voters (60 percent) reported they were more likely to listen to the poll worker's explanation of CV than white voters (38 percent). Ratings of the poll worker's explanation were similar among all racial and ethnic groups.

The voter education program implemented by Port Chester took place between February and June 2010. Thus, the exit poll asked voters when they learned about CV. Roughly 77 percent of voters familiar with CV reported learning about it during the time the voter

¹⁰See Table A-10 in the online appendix.

TABLE 1
Rating Education Campaign Elements as "Very Helpful" by Race/Ethnicity

Source	White	African American	Hispanic/Latino	Asian	Other
"How to Vote with Cumulative Voting" handout ($N = 1,462, \chi^2 = 11.6, p = 0.17$)	62.4 percent	57.8 percent	68.7 percent	70.0 percent	53.9 percent
Other written materials on cumulative voting ($N = 1,487, \chi^2 = 54.0, p < 0.0001$)	48.3 percent	47.5 percent	66.0 percent	66.7 percent	48.0 percent
Community presentations ($N = 1,234, \chi^2 = 51.9, p < 0.0001$)	46.4 percent	50.9 percent	66.3 percent	47.6 percent	34.8 percent
Port Chester Votes website ($N = 627, \chi^2 = 28.4, p < 0.0001$)	39.5 percent	46.0 percent	60.0 percent	66.7 percent	42.7 percent
Radio and TV commercials ($N = 790, \chi^2 = 82.3, p < 0.0001$)	28.5 percent	32.1 percent	60.2 percent	78.6 percent	20.0 percent

NOTE: Evaluations are based on voters who reported seeing the program elements. Each cell indicates the percentage of voters from the group at the top rating the source in the left-hand column as "very helpful." The chi-square statistic indicates whether differences between racial or ethnic groups are statistically significant.

education program was conducted. Hispanic and African-American voters were more likely than non-Hispanic white voters to learn about CV in the final month before the election.¹¹

The above-mentioned evidence indicates that voters noticed the educational program. To what extent then, did voters understand CV and use it in the way it is intended? To measure voter understanding, we first assessed reported familiarity before Election Day. Just over half of the respondents (52 percent) reported that they were “very familiar” or “somewhat familiar” with CV. In comparing racial and ethnic groups (see Table A-13), Hispanic voters were most likely to report being “very familiar” with CV (41 percent) while white voters were least likely to report being “very familiar” with CV (18 percent). One can interpret these figures as the glass being half empty or half full. On the one hand, one might hope that more than half the voters would be familiar with CV in this election. On the other hand, given that almost no voters knew about CV before the election, it is an accomplishment that at least half professed some familiarity before voting. The fact that roughly 75 percent of Hispanic voters reported being very familiar or somewhat familiar with CV suggests that the voter education program reached a substantial portion of one key target audience. Furthermore, first-time voters and those who have not lived in Port Chester a long time reported being just as familiar with CV as experienced Port Chester voters and community members.

Voters were also asked how easy it was to understand the instructions at the voting location. Overall, 71 percent reported that the voting instructions were “very easy” to understand, 22 percent of voters reported that the voting instructions were “somewhat easy” to understand, 5 percent reported that the voting instructions were “somewhat difficult” to understand, and only 2 percent of voters reported that the voting instructions were “very difficult” to understand. Asian voters were less likely than other voters to rate the voting instructions as “very easy” to understand.¹² Hispanic and African-American voters rated the voting instructions somewhat more positively than white voters. Overall, we see little evidence that Hispanic voters had notable difficulties with the voting instructions.

To measure their comfort in casting a ballot, the survey asked voters: “Compared to previous elections, was casting your ballot in this election easier, about the same, or more difficult?” Overall, 23 percent of respondents said that casting their ballot in this election was easier, 66 percent reported that it was about the same, and 10 percent answered that casting their ballot in this election was more difficult than in previous elections. These figures are similar to other studies of the CV experience (Brischetto and Engstrom, 1997).

As Table 2 indicates, every racial and ethnic group indicated voting in this election was easier rather than harder than previous elections. Hispanic voters offered the most positive assessments, with 49 percent indicating voting in 2010 was easier than before and only 5 percent indicating it was harder. White voters were least likely to report that casting their ballot in this election was easier than in past elections (15 percent). Similarly, voters who learned Spanish as their first language were most likely to report that casting their ballot was easier in this election (50 percent) while voters who learned English as their first language were less likely to report that voting in this election was easier than previous elections (17 percent). Finally, younger voters and those with less education were more likely to answer that voting in the 2010 election was easier. The more positive assessment from Hispanic voters resembles the findings from studies of CV in other locations (Brischetto and Engstrom, 1997; Cole, Engstrom, and Taebel, 1990; Cole and Taebel, 1992).

Our final assessment is of voting behavior in the Port Chester election, particularly whether voters took advantage of CV’s unique features. The exit poll asked voters: “Did

¹¹ See Table A-12 in the online appendix.

¹² see Table A-14 in the online appendix.

TABLE 2
Casting a Ballot in This Election Compared to Previous Elections by Race/Ethnicity

Response	White	African American	Hispanic/Latino	Asian	Other
Easier in this election	14.6 percent	28.4 percent	48.7 percent	30.4 percent	12.9 percent
About the same	73.3 percent	64.9 percent	46.8 percent	60.9 percent	74.2 percent
More difficult in this election	12.1 percent	6.7 percent	4.5 percent	8.7 percent	12.9 percent
Total (N = 1,757)	100 percent (N = 1,189)	100 percent (N = 134)	100 percent (N = 380)	100 percent (N = 23)	100 percent (N = 31)

NOTE: χ^2 (8 df) = 196.5, $p < 0.001$.

you use all six of your votes in this election?" Overall, 97 percent of voters reported that they used all six of their votes in the election. Only seven respondents (less than 1 percent) said they did not know that they had six votes to cast.¹³ Roughly 3 percent of voters reported that they decided not to use all six of their votes. Thus, most of the voters who did not use all six of their votes did so intentionally. Furthermore, these figures did not vary by race or ethnicity, age, or education. Among each racial and ethnic group, over 95 percent of voters said they used all six of their votes. These figures are buttressed by the official election returns. There were 3,357 voters in the Port Chester election, who cast a total of 19,512 votes in the election. The average number of votes cast by a Port Chester voter is roughly 5.8 (19,512 divided by 3,357). Put differently, only 3 percent of votes available in the election were left unused. This stands in contrast to the much higher undervote rate when CV was introduced in Amarillo, Texas, in 2000 (Rausch, 2001). We find similar ballot completion figures for the 2013 election for the Board of Trustees, in which the average number of votes cast was 5.6, for an undervote rate slightly below 7 percent, similar to the undervote rate for the competitive mayoral race on the same ballot in 2013 (6 percent). These figures compare favorably to undervote data from other local elections (e.g., Neely and Cook, 2008; Neely, Blash, and Cook, 2005).

A related question with CV is whether voters properly recognize that they can aggregate ("plump") their votes for one or a small number of candidates. The exit poll asked voters to report how many candidates received their votes. Slightly more than one-third of the respondents (34 percent) reported plumping all of their votes for one candidate; another 18 percent reported casting their votes for two candidates; and another 16 percent reported giving their votes to three candidates. Thus, 68 percent of the respondents cast their votes for three candidates or fewer. This might serve as a conservative estimate of the share of voters who aggregated their votes to some degree. Since more than 95 percent of voters reported using all six of their votes, some (and perhaps many) of the voters who cast their votes for four or five candidates could have given more than one vote to a candidate. Among voters who said they used all six votes, 80 percent reported casting their votes for five or fewer candidates, which is a more liberal estimate of the frequency of vote aggregation in the election. At the other extreme, only 19 percent of voters reported spreading their votes among six candidates. Either way, it appears that many voters plumped their votes in this election. According to the official election results, at least one candidate for the Board of Trustees received more votes than the number of total voters in 11 of the 16 election districts in Port Chester. Thus, some voters must have aggregated votes for the same candidate in each of those 11 election districts.

Race and ethnicity appear to be strongly related to how voters cast their ballots (see Table 3). Roughly 51 percent of Hispanic voters and 47 percent of African-American voters reported plumping all of their votes for one candidate, compared to 27 percent of white voters who gave all their votes to one candidate. Roughly 77 percent of Hispanic voters and 72 percent of African-American voters reported casting their votes for three or fewer candidates, compared to 65 percent of white voters who gave their votes to three or fewer candidates. These figures comport with some of the official election totals. There is clear evidence of vote aggregation (i.e., more votes received than the number of voters) for Luis Marino (the Hispanic Democrat) in five election districts and for Gregory Adams (an African-American Democrat) in three districts. The five districts where Marino performed strongly were in the southern portion of the village with the highest share of Hispanic registered voters. Marino was elected, but Adams fell 44 votes short of getting elected.¹⁴

¹³"I did not know I could do that" was one of the response options for the question.

¹⁴Adams was later elected to the Board of Trustees in 2013. Marino was reelected in 2013 as well.

TABLE 3
How Voters Cast Their Ballots by Race/Ethnicity

Response	White	African American	Hispanic/Latino	Asian	Other
Gave all my votes to one candidate	26.8 percent	46.9 percent	50.9 percent	41.7 percent	24.1 percent
Gave my votes to two candidates	20.4 percent	15.6 percent	14.9 percent	16.7 percent	17.2 percent
Gave my votes to three candidates	18.2 percent	9.4 percent	11.1 percent	12.5 percent	20.7 percent
Gave my votes to four candidates	9.4 percent	9.4 percent	4.2 percent	12.5 percent	10.3 percent
Gave my votes to five candidates	5.0 percent	3.9 percent	2.1 percent	0.0 percent	0.0 percent
Gave my votes to six candidates	20.2 percent	14.8 percent	16.7 percent	16.7 percent	27.6 percent
Total (N = 1,680)	100 percent (N = 1,122)	100 percent (N = 128)	100 percent (N = 377)	100 percent (N = 24)	100 percent (N = 29)

NOTE: χ^2 (20 df) = 96.9, $p < 0.001$.

Three other candidates, all white, also benefited from clear evidence of vote aggregation: Daniel Brakewood (Democratic Party) in three districts, John Branca (Conservative Party) in two districts, and Bart Didden (Taxpayer Relief Movement) in four districts. All three were elected.

Two additional questions on the survey probed for some of the reasons voters cast their votes as they did. One follow-up question asked voter: "If you did not give more than one vote to a candidate, what was the primary reason?" Roughly two-thirds of the respondents marked their answer as "does not apply," which suggests that roughly two-thirds of the voters aggregated their votes to some extent. Again, this is probably a conservative estimate of the percentage of respondents who aggregated their votes, since some of the voters who did give a reason also reported voting for just one or two candidates. Among the roughly one-third of voters who gave a reason for not giving more than one vote to any candidate, 61 percent reported that they wanted to support six candidates, 8 percent reported that they "didn't know I could do that," and 31 percent gave other reasons for not giving more than one vote to a candidate. Most of those who wrote another reason noted that it was their personal preference. Thus, among voters who did not aggregate their votes, the large majority of them indicated that they intended to do so.

We examined the data further to determine if there are unique characteristics of the relatively small number of voters who reported that they did not know they could aggregate their votes (see Table A-15 in the online appendix). Hispanic voters (16 percent) and African-American voters (15 percent) were more likely to report that they did not know they could plump their votes than white voters (4 percent). Similarly, younger voters, less educated voters, and those whose first language was Spanish were more likely to answer that they did not know they could aggregate their votes.

Among the voters who gave a reason for casting more than one vote for a candidate, 86 percent reported that they wanted to give that candidate a better chance to win, 8 percent reported that they did not know enough about the other candidates, and 6 percent gave other reasons. Most of those who wrote another reason noted that it was their personal preference. Thus, among voters who reported giving more than one vote to a candidate, the large majority of them did so to give that candidate a better chance of winning. This suggests that voters who aggregated their votes were behaving strategically. We find a relationship between race and ethnicity and the reason given for casting more than one vote for a candidate. Hispanic voters (11 percent), African-American voters (19 percent), and voters of another unspecified racial or ethnic group (14 percent) were more likely to report that they did not know enough about the other candidates than white voters (6 percent). However, for each racial and ethnic group, large majorities reasoned that they gave more than one vote to a candidate to help that candidate win.

As a final assessment of CV, voters were asked: "Overall, how was your voting experience today?" Among all survey respondents, 61 percent selected "excellent," 32 percent selected "good," 5 percent chose "fair," and 2 percent selected "poor" to answer that question. For each of the demographic groups defined by race/ethnicity, first language, age, and education, roughly nine in 10 voters described the voting experience in this election as excellent or good. This further supports the conclusion that Port Chester voters had a positive encounter with CV.

Conclusions

In spite of concerns about voter competence with cumulative voting, we find a largely positive voter experience in Port Chester. Despite introducing several important new

features, half of the voters were familiar with CV before the election and 80 percent said they knew about the early voting feature. Much of what voters learned about CV and early voting appears to have come from the village's voter education program. The most commonly cited source of information about CV and early voting was the Port Chester Votes information provided by the village. Most voters indicated that they were comfortable with the voting process.

Furthermore, most voters were able to cast their votes properly. Most exit poll respondents indicated that they understood how they could use CV. Almost all voters reported using all six of their votes. We also find evidence that voters made strategic use of CV. We estimate that at least two-thirds of Port Chester voters aggregated their votes to some extent. Among those who aggregated their votes, a large majority explained that they intended to do so to help a particular candidate win. Among those who did not aggregate their votes, a large majority explained that they did so because they wanted to support six candidates. Along the same lines, voters were more likely to report that voting in this election was easier rather than harder compared to previous elections. Overall, more than 90 percent of voters rated the experience as excellent or good.

The exit poll also indicates a particularly positive usability experience for Hispanic voters. On most measures, Hispanic voters reported a more favorable experience than other voters. Hispanic voters also indicated that they knew how to plump their votes. According to the survey, Hispanic and African-American voters were more likely than other voters to plump all of their votes for one candidate. The official election results appear to support this finding. A Hispanic candidate (Luis Marino) received more votes than total voters in five different election districts on Election Day. Therefore, some voters must have aggregated their votes for Marino at those polling locations. Finally, Hispanic and African-American voters rated the voting experience very highly and were more likely than other voters to report that casting a ballot was easier in this election than in previous elections.

The study suggests perhaps two small areas of concern with respect to efforts to educate minority voters in Port Chester. First, among voters who said they did not give more than one vote to a candidate, Hispanic voters (16 percent) and African-American voters (15 percent) were more likely than white voters (4 percent) to answer that they did not know they could plump their votes. These percentages are low, but they suggest the importance of continued outreach in explaining CV to Hispanic and African-American communities. And despite this finding, Hispanic and African-American voters were more likely than white voters to report that they plumped all of their votes for one candidate. Second, African-American voters (69 percent) and Hispanic voters (75 percent) were less likely than white voters (85 percent) to report that they knew about early voting. This finding is mitigated by the fact that in the exit poll sample Hispanic and African-American voters were somewhat more likely than white voters to cast their ballots during the early voting period.

In addition, there was somewhat limited strategic activity on the part of political parties and candidates to take advantage of CV in the 2010 election. Both parties nominated a Hispanic candidate and an African-American candidate. However, the Democratic Party was strategic in nominating only four candidates, presumably intending that Democratic voters would aggregate their votes for favored party candidates. In contrast, the Republican Party nominated a full slate of six candidates. In addition, all six GOP candidates also appeared on the Citizens for Tax Relief ballot line. While this is common under New York's fusion law, multiple ballot lines may complicate efforts to encourage voters to aggregate votes for a single candidate. In addition, it appears that candidates were not aggressive in encouraging supporters to plump their votes in the 2010 election (Semple, 2010). There is some evidence of party adaptation to CV, as there were fewer fusion candidates in the 2013

election. The 2013 election returns also reveal evidence of vote plumping, particularly for Luis Marino.

The Port Chester case provides further evidence of voter competence with CV. The overall positive experience for Port Chester voters with CV reflects well on the Port Chester Votes educational program, which is comprehensive and requires substantial staff and resources. Other communities that are weighing the adoption of CV for local elections should also be prepared to implement a parallel voter education effort.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Table A-1: Survey Response Rates

Table A-2: Survey Cooperation Rates by Voting Location

Table A-3: Sex of Respondents and Nonrespondents (Early Voters)

Table A-4: Sex of Respondents and Nonrespondents (Election Day Voters)

Table A-5: Age of Respondents and Nonrespondents (Early Voters)

Table A-6: Age of Respondents and Nonrespondents (Election Day Voters)

Table A-7: Race/Ethnicity of Respondents and Nonrespondents (Early Voters)

Table A-8: Race/Ethnicity of Respondents and Nonrespondents (Election Day Voters)

Table A-9: Nonresponse Weights for Racial and Ethnic Groups (All Voters)

Table A-10: Sources of Information on Cumulative Voting by Race/Ethnicity

Table A-11: Helpfulness of Information on Cumulative Voting

Table A-12: When Voters Learned About Cumulative Voting by Race/Ethnicity

Table A-13: Voter Familiarity with Cumulative Voting by Race/Ethnicity

Table A-14: Rating of Voting Instructions by Race/Ethnicity

Table A-15: Reason for Not Plumping Votes by Race/Ethnicity