Administrative Report

N.3., **File #** 24-0523 **Meeting Date:** 7/30/2024

To: **MAYOR AND CITY COUNCIL**

From: ELEANOR MANZANO, CITY CLERK

TITLE

DISCUSSION AND POSSIBLE ACTION TO PROVIDE DIRECTION TO STAFF RELATING TO THE DRAFT ORDINANCE AMENDING THE CITY'S MUNICIPAL CODE RELATED TO RANKED CHOICE VOTING AS AN INSTANT RUNOFF MODEL.

EXECUTIVE SUMMARY

The City Clerk and City Attorney's Office jointly presented to the City Council at its Regular Meeting on January 23, 2024, and sought direction relating to implementing Ranked Choice Voting (RCV) and to prepare an ordinance detailing the process and present the item to Council in April 2024.

Ranked Choice Voting is a method that allows voters to rank candidates on the ballot in order of preference and the ballots are tabulated (counted) in rounds that simulate a series of runoffs until a candidate receives 50% plus 1, and therefore is determined to be the winner. RCV is also known and referred to as "instant runoff voting." RCV only applies to City Offices candidates, and does not include Redondo Beach Unified School District Members of the Board of Education.

This proposed draft ordinance will repeal Redondo Beach Municipal Code ("RBMC") Section 2-2.202 <https://ecode360.com/42642408> of Title 2, Chapter 2, Article 2, Section 2-2.202 (Administration - Elections, Notice of runoff elections) and then amend Title 2, Chapter, 2, by adding Article 4 (Administration - Elections, Instant Runoff Voting).

A proposed draft ordinance has been prepared for your review, input, and to provide direction to staff in the areas listed below.

1. Maximum Ranking Number of Candidates due to HART equipment limitation at this time is 6. Select the total number of rankings with no more than 6.

   Note: The City of Berkeley, which has been conducting RCV Elections since 2010, initially had a maximum of 3 and increased the number to 5 in 2022. They use Dominion equipment which now has a maximum of 10 rankings.

2. Write-In Candidate
   Select the total number of ballot write-in with no more than 6.

   Note: The number selected should be consistent with the Maximum Ranking Number of

Candidates (No. 1 Above).

Other points of interests on the proposed draft ordinance include the items listed below.

- **Skipped Ranking** occurs during any of the following:
  When a voter skips ranking a candidate; and
  When a voter includes a non-qualified write-in candidate.

For example, a ballot contains rankings for a second-choice candidate, third choice candidate, fourth choice candidate, but skips (did not select) a candidate for their first choice. Assuming that the voter's second choice is a continuing candidate, the ballot shall be transferred to the voter's second choice.

- **Undervote Ballot** is when a voter has not voted for a candidate indicated at *any* ranking, will be declared an undervote, the ballot becomes exhausted and does not continue in the series.

- **Overvote and Exhausted Ballots** is when a voter has voted for more than 1 candidate in a ranking (round), because they overvoted, the ballot becomes exhausted (invalid) and does not continue in the series.

- **Ties** In the event that two or more candidates tie for the fewest number of votes, the candidate to eliminate shall be chosen by lot.
  If there are only two candidates in the *final round* and they are tied, the winner will be the candidate who received the higher number of votes in round one.

- **Unofficial Election Night Report** - On Election Day, the City Clerk will conduct unofficial count of all ballots received by the City Clerk prior to election day. This will not constitute a "round" of county and no candidates will be eliminated based on the report. On Final Day, the City Clerk will conduct all rounds of ranking until reaching the final two candidates; and will then provide Final Report(s).

In conducting research to prepare this ordinance, City Clerk staff contacted various sources to receive input, discuss best practices, and consider concerns relating to RCV. Staff contacted the following, City of Berkeley City Clerk, County of Humboldt Registrar of Voters, and HART representative. Based on staff research, these are the areas that vary from the different cities that have conducted/will conduct RCV and require City Council direction.

Furthermore, as a status update, the City Clerk's Office has been researching and will present a Voter Education and Outreach Plan to the City Council in August 2024.

Additionally, this City will be the first to conduct RCV in the County of Los Angeles, serving as a model to other cities in the Southern California area.

BACKGROUND

The City of Redondo Beach held its General Municipal Election on March 7, 2023, conducted by All-Mail Ballot. The electorate successfully voted, by an overwhelming 76.67%, for Measure CA5. The

ballot measure amended Charter Section 18.4, “Majority Vote; Instant Run Off Election” which replaced runoff elections for the Elected Offices of the City with an instant run off voting system.

At the last Regular City Council Meeting on April 2, 2024, the City Council directed the City Attorney to prepare an ordinance amending the City’s Municipal Code to implement a voting method in March 2025 related to an instant runoff voting system, which on January 23, 2024, the City Council approved to move forward with RCV.

COORDINATION

This report was prepared in coordination with the City Attorney’s Office.

FISCAL IMPACT

There is minimal fiscal impact associated with this item.

SUBMITTED BY:
Eleanor Manzano, City Clerk

ATTACHMENTS

- Proposed Draft Ordinance
- RCV Case - San Francisco, Dudum v. Arntz

ORDINANCE NO. XXXX-24

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF REDONDO BEACH, CALIFORNIA, REPEAL TITLE 2, CHAPTER 2, ARTICLE 2, SECTION 2-2.202 (NOTICES OF RUNOFF ELECTIONS) AND ADDING ARTICLE 4 TO MUNICIPAL CODE TITLE 2, CHAPTER 2, TO PROVIDE FOR INSTANT RUNOFF VOTING

WHEREAS, on March 7, 2023, the voters of the City of Redondo Beach adopted Measure CA5, an amendment to the City Charter of the City of Redondo Beach, replacing runoff elections for elections for elective offices of the City with ranked choice voting, also known as instant runoff voting; and

WHEREAS, CA5 amended Charter section 18.4 which now includes the following language: "The City Council must by ordinance provide for an instant runoff voting system in the elections of each city elective office listed in Article VI, Article VIII, and Article X. A majority (more than half), of the votes cast for all candidates, or a majority of the operative votes on continuing ballots in subsequent rounds, is required for the election of a candidate to each such office as determined by an instant runoff voting system process detailed in the ordinance the council must enact"; and

WHEREAS, this ordinance is intended to implement the direction of section 18.4 of the Charter.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF REDONDO BEACH, CALIFORNIA, DOES ORDAIN AS FOLLOWS:

SECTION 1. REPEAL OF CODE SECTIONS. Section 2-2.202 of Title 2, Chapter 2, Article 2, Section 2-2.202 of the Redondo Beach Municipal Code is hereby repealed.

SECTION 2. AMENDMENT OF CODE. Title 2, Chapter 2, Article 4 is hereby added to the Redondo Beach Municipal Code and shall read as follows:

"Section 1. Title 2, Chapter 2, Article 4 is hereby added to the Redondo Beach Municipal Code as follows:

ARTICLE 4 – ELECTIONS – INSTANT RUNOFF VOTING
2-2.401 Definitions
2-2.402 General Provisions
2-2.403 Ballot
2-2.404 Tabulation
2-2.405 Ties

2-2.406 Skipped Rankings
2-2.407 Undervotes, Overvotes and Exhausted Ballots
2-2.408 Reports
2-2.409 Continuing the Tally to Two Candidates
2-2.410 Manual Tally

2-2.401 Definitions.

A. “Choice” means an indication on a ballot of a voter’s assigned ranking of candidates (i.e. first choice, second choice, third choice, etc.) for any single office according to the voter’s preference.

B. "Continuing ballot" shall mean a ballot that counts towards a continuing candidate.

C. "Continuing candidate" shall mean a candidate that has not been eliminated.

D. “Exhausted ballot” means any ballot that cannot be advanced because no further continuing candidates are ranked on that ballot.

E. "Majority of votes" shall mean more than fifty percent (50%) of the votes cast on continuing ballots.

F. “Next ranked” means the highest ranked choice for a continuing candidate.

G. “Overvote” means any ballot with more than one candidate indicated for the same ranking.

H. "Ranked choice voting" shall mean an election system in which voters rank the candidates for office in order of preference, and the ballots are counted in rounds that, in the case of a single-winner election, simulate a series of runoffs until one candidate receives a majority of votes. Also known as “instant runoff voting.”

I. “Round of counting” or “round” means a step in the counting process during which votes for all continuing candidates are tabulated for the purpose of determining whether a candidate has achieved a majority of the votes cast for a particular office, and, absent a majority, which candidate or candidates must be eliminated. No round of counting or elimination of candidates can occur before all eligible ballots are received by the City Clerk.

J. “Skipped ranking” means a ballot contains a higher ranking with no candidate indicated, and contains a lower ranking with a candidate indicated.

K. “Undervote” means any ballot that has no candidates indicated at any ranking.

L. “Unofficial Election Night Report” means an initial unofficial report regarding the results of ballots received by the City Clerk before election day. This does not constitute a round of counting and no candidates will be eliminated based on the report.

M. “Vote” means a ballot choice that is counted toward the election of a candidate. During each round of counting, each continuing ballot contains one vote. All first choices are votes and lower ranked choices are potential runoff votes that may, in accordance with the requirements of this chapter, be credited to and become votes for a candidate.

N. “Voting equipment” means all ballots and/or voting devices, vote tabulating systems and/or similar or related systems to be used in the conduct of the City's election,

including but not limited to paper ballot systems, optical scan systems, and direct recording electronic systems.

2-2.402 General Provisions.

A. Ranked choice voting elections in the elections of each city elective office listed in Article VI, Article VIII, and Article X shall be conducted according to the procedures in this section.

B. Ranked choice voting shall commence with the 2025 General Municipal Election.

2-2.403 Ballot.

A. The ranked choice voting ballot shall allow voters to rank six choices.

B. The ballot shall not interfere with a voter's ability to rank a write-in candidate.

C. Instructions provided to voters shall conform substantially to the following specifications, but may be modified based on ballot design and voting equipment used:

"Vote by ranking candidates in your order of choice. You may rank as many or as few candidates as you choose. Select a different candidate for each ranking. Select only one candidate in each ranking. Ranking more candidates will not hurt your higher ranked candidates. Do not skip rankings."

2-2.404 Tabulation.

The ballots shall be counted in rounds.

A. In the first round, every ballot shall count as a vote towards the first choice candidate.

B. After any round, if any candidate receives a majority of votes from the continuing ballots, that candidate shall be declared the winner.

C. If no candidate receives a majority, the candidate receiving the fewest number of votes shall be eliminated.

D. Every ballot counting towards the eliminated candidate shall be advanced to the next-ranked continuing candidate. All the continuing ballots for all continuing candidates shall be counted again in a new round.

2-2.405 Ties.

In the event that two or more candidates tie for the fewest number of votes, the candidate to eliminate shall be chosen by lot.

If there are only two candidates in the final round and they are tied, the winner will be the candidate who received the higher number of votes in round one.

2-2.406 Skipped Rankings.

In the first or any round, in the event that any ballot reaches a ranking with no candidate indicated, that ballot shall immediately be advanced to the next ranking.

2-2.407 Undervotes, Overvotes, and Exhausted Ballots.

After each round, any ballot that is not continuing is either an undervote, overvote, or

exhausted ballot. Any ballot that has been declared an undervote, overvote, or exhausted shall remain so and shall not count towards any candidate in that round or in subsequent rounds.

2-2.408 Reports.

The following reports shall be produced for public review.

A. The "summary report" for a contest shall mean a report that lists the candidate vote totals in each round, and the cumulative numbers of undervotes, overvotes, and exhausted ballots in each round.

B. The "ballot image report" for a contest shall mean a report that lists, for each ballot, the candidate or candidates indicated at each ranking, the precinct of the ballot, and whether the ballot was cast by a vote-by-mail ballot. In the report, the ballots shall be listed in an order that does not permit the order in which they were cast in each precinct to be reconstructed.

C. The "comprehensive report" for a contest shall mean a report that lists the vote totals in the summary report by precinct. The report shall list, for each round, the number of ballots cast in each precinct that:

1. were tallied as votes for each candidate in that round,
2. have been declared undervotes,
3. have been declared overvotes, cumulatively for all previous rounds and inclusive of the reported round of tabulation, and
4. have been declared exhausted cumulatively for all previous rounds and inclusive of the reported round of tabulation.

D. Mode and manner of release. Preliminary versions of the summary report and ballot image report shall be made available as soon as possible after the commencement of the canvass of votes cast. The summary report, ballot image report, comprehensive report, and preliminary versions of the summary report and ballot image report shall be made available to the public during the canvass via the Internet and by other means. The ballot image report and preliminary versions of the ballot image report shall be made available in a plain text electronic format. In any case, preliminary versions of these reports shall be made available to the public prior to the commencement of the manual tally.

2-2.409 Continuing the Tally to Two Candidates.

If a winner is declared when there are three or more continuing candidates (including the winner), and if the vote tabulating system allows for it, additional rounds of tallying shall occur until there are only two candidates left for reporting purposes only.

2-2.410 Manual Tally.

A. A preliminary version of the comprehensive report shall be made available to the public prior to the selection of precincts for the public one percent manual tally, as provided by state law.

B. After each round of the manual tally, the second and third choice votes shall be assigned based of the candidate totals in the summary round-by-round report for

the entire contest.

SECTION 3. INCONSISTENT PROVISIONS. Any provisions of the Redondo Beach Municipal Code, or appendices thereto, or any other ordinances of the City inconsistent herewith, to the extent of such inconsistencies and no further, are hereby repealed.

SECTION 4. SEVERABILITY. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of the Ordinance. The City Council hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid or unconstitutional.

SECTION 5. **PUBLICATION AND EFFECTIVE DATE.** This Ordinance shall be published by one insertion in the official newspaper of said city, and same shall go into effect and be in full force and operation from thirty (30) days after its final passage and adoption.

PASSED, APPROVED AND ADOPTED this ___ day of August, 2024.

_____
James A. Light, Mayor

APPROVED AS TO FORM:

_____
Michael W. Webb, City Attorney

ATTEST:

_____
Eleanor Manzano, CMC, City Clerk

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF REDONDO BEACH)

I, Eleanor Manzano, City Clerk of the City of Redondo Beach, California, do hereby certify that Ordinance No. O- was introduced at a regular meeting of the City Council held on the _____, 2024, and approved and adopted by the City Council of the City of Redondo Beach, California, at a regular meeting of said City Council held on the _____, 2024, and there after signed and approved by the Mayor and attested by the City Clerk, and that said Ordinance was adopted by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
Eleanor Manzano, CMC
City Clerk

DUDUM v. ARNTZ

No. 10-17198.

- **View Case**

640 F.3d 1098 (2011)

Ron DUDUM; Matthew Sheridan; Elizabeth Murphy; Katherine Webster; Marina Franco; Dennis Flynn, Plaintiffs-Appellants, v. John ARNTZ, Director of Elections of the City and County of San Francisco; City and County of San Francisco, a municipal corporation; San Francisco Department of Elections; San Francisco Elections Commission, Defendants-Appellees.

United States Court of Appeals, Ninth Circuit.

Argued and Submitted March 15, 2011.

Filed May 20, 2011.

Attorney(s) appearing for the Case

James R. Parrinello , Christopher E. Skinnell , Nielsen, Merksamer, Parrinello, Mueller & Naylor, LLP, San Rafael, CA, for the plaintiffs-appellants.

Therese M. Stewart , Chief Deputy City Attorney, and Jonathan Givner , Andrew Shen , and Mollie Lee , Deputy City Attorneys, San Francisco, CA, for the defendants-appellees.

Before: RICHARD A. PAEZ, MARSHA S. BERZON, and CARLOS T. BEA, Circuit Judges.

DUDUM V. ARNTZ
ELECTIONS – RANK CHOICE VOTING CASE

Facts

San Francisco sought to improve upon the electoral system it employed in some municipal elections. Originally, San Francisco implemented a runoff election system. This system's flaws included the prevalence of strategic voting and wasted ballots. To resolve these issues, San Francisco amended its city charter. Thus, a restricted instant-runoff voting (IRV) system supplanted the prior runoff election system. Under this system, voters could select a maximum of three candidates in a single round of voting. Voters would rank these selections from most to least favorable. A series of tabulations would follow, resulting in the removal of inadequate candidates. This process would persist until the candidate with a majority of votes remained. Dudum (plaintiff) brought suit, alleging that this impinged on equal protection. Dudum appealed from the district court's ruling, which favored San Francisco's IRV system.

DUDUM V. ARNTZ
ELECTIONS – RANK CHOICE VOTING CASE

Dudum v. Arntz, 640 F.3d 1098 | Casetext Search + Citator

OPINION

BERZON, Circuit Judge:

In 1873, Charles Lutwidge Dodgson, better known by his pen name, Lewis Carroll, spotted what he took to be an "extraordinary injustice": using simple plurality voting to determine the winners of elections. Dodgson, celebrated for his whimsical classics *Alice's Adventures in Wonderland* and *Through the Looking Glass*, was also a mathematician who developed election systems — meaning, simply, methods for translating preferences, or votes, into winners of elections. Dodgson disliked simple plurality voting because, in fields with several candidates, it can elect a candidate who receives the most first-place votes but is strongly *disfavored* by a majority of the electorate. Dodgson's innovative election systems were designed to remedy that limitation, and are still praised today because they tend to elect candidates with widespread electoral support.

See Charles L. Dodgson, *A Discussion of the Various Methods of Procedure in Conducting Elections* (1873), *reprinted in* 3 THE PAMPHLETS OF LEWIS CARROLL 33, 35 (Francine F. Abeles Charlie Lovett eds., 2001).

See, e.g., Francine F. Abeles, *Introduction to the Political Pamphlets and Letters, in* 3 THE PAMPHLETS OF LEWIS CARROLL, *supra*, at 1, 21 22; Douglas J. Amy, BEHIND THE BALLOT BOX 187-89 (2000); Samuel Merrill, MAKING MULT1CANDIDATE ELECTIONS MORE DEMOCRATIC 70 (1988).

While Dodgson preferred his systems to simple plurality voting, he recognized that his innovations were themselves imperfect. In a letter accompanying one of his pamphlets, Dodgson lamented: "A really scientific method for arriving at the result which is, on the whole, most satisfactory to a body of electors, seems to be still a desideratum."

See Charles L. Dodgson, *Circular Accompanying A Method of Taking Votes on More Than Two Issues* (1877), *reprinted in* 3 THE PAMPHLETS OF LEWIS CARROLL, *supra*, at 59, 59 (emphasis omitted).

Over a century later, Dodgson's wish remains unfulfilled. No perfect election system has been devised. Nonetheless, some governmental entities continue to experiment with innovative methods for electing candidates. At issue here is one such system, used by San Francisco for the election of certain city officials.

FACTUAL AND PROCEDURAL HISTORY

In March 2002, San Francisco voters approved a ballot measure, Proposition A, amending the City Charter to adopt a new electoral system for certain municipal elections. Before adoption of Proposition A, most city officials were selected in a two-round election: The city first held a general election. Then, unless one candidate won an outright majority in the first-round election, the two candidates who had garnered the most votes faced each other in a runoff election. Proposition A implemented instant runoff voting ("IRV") to replace the two-round runoff election system for the following city offices: Mayor, Sheriff, District Attorney, City Attorney, Treasurer,

Assessor-Recorder, Public Defender, and members of the Board of Supervisors. *See* S.F. CHARTER § 13.102(b).

San Francisco Charter § 13.102, which codifies Proposition A, refers to the City's voting system as both "instant runoff" voting and "ranked-choice" voting. *See* S.F. CHARTER § 13.102. Election experts also sometimes call this form of voting the "alternative vote system." *See, e.g.*, Samuel Issacharoff, *et al.*, THE LAW OF DEMOCRACY 1095 (2d ed. 2002). We refer to the City's system using the initialism for instant runoff voting, although, as will become clear, the label is somewhat misleading.

IRV allows voters to rank, in order of preference, candidates for a single office. The Department of Elections (the "Department") then tabulates the voters' preferences as follows: First, all first-choice rankings indicated on the ballots are counted. If a candidate wins a majority of these first-choice votes, he wins the election. *Id.* § 13.102(c). If not, the candidate who received the fewest first-choice votes is "eliminated," meaning that that candidate cannot win the election. The second-choice votes on the ballots that had selected the eliminated candidate are then distributed to those voters' second-choice candidates. Some candidates' vote totals, as a result, now reflect a combination of first- and second-choice votes. *Id.* If all candidates ranked by a voter are eliminated, that voters' ballot is "exhausted," meaning that it is not recounted as the tabulation continues. *Id.* § 13.102(a). As long as no candidate receives a majority of the votes from the "continuing" ballots — that is, the nonexhausted ballots — the process of eliminating candidates, transferring preferences, and "exhausting" ballots repeats. A candidate is declared elected when he receives a majority of the operative votes on the "continuing" ballots. *Id.* § 13.102(d).

Two or more candidates can be "eliminated" at the same time if the total number of votes they receive is less than the number of votes received by the next-lowest ranked candidate. See S.F. CHARTER § 13.102(e).

San Francisco's Charter provides that IRV ballots are to allow voters to rank a number of candidates equal to the total number of candidates running in an election. *Id.* § 13.102(b). For instance, if ten candidates are running for mayor, then voters are to be able to rank all ten of them. But the Charter also provides that if the voting system or equipment used by the Department cannot "feasibly accommodate" ranking that many choices, the Director of Elections can limit the number of candidates voters may rank to no fewer than three. *Id.* We refer to this variant as "restricted IRV."

As it has turned out, in all of the City's IRV elections since Proposition A passed, the Department has restricted the number of rankings on each ballot to three. San Francisco maintains, and the plaintiffs, several San Francisco voters (collectively "Dudum"), do not dispute, that this choice is one of necessity: The voting machines currently in use are not equipped to tabulate unlimited rankings; cost and logistical concerns make accommodating the unlimited option untenable; and providing a ballot on which voters may rank every candidate in a large field could result in confusion, voter error, and inaccuracies in vote calculation.

The Department makes publicly available on its website tables showing the election results for the City's past IRV elections. These tables tally the total ballots cast in each election; provide synopses of vote distribution during the tabulation process and of the final votes attributed to each candidate; and show the numbers of ballots "exhausted" as the tabulations

proceeded. *See, e.g.*, City and County of San Francisco Dep't of Elections Website, Elections Archives by Year, *available at* http://www.sfgov2.org/index.aspx?page= 1671 (last visited May 12, 2011). These tables provide helpful illustrations of how restricted IRV has worked in practice.

In an order filed simultaneously with this opinion, we grant Dudum's request for judicial notice of the City's official election results as posted on the Department's website. *See* Fed.R.Evid. 201(b) (allowing a court to take judicial notice of a fact "not subject to reasonable dispute in that it is . . . capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned"); *Daniels-Hall v. Nat'l Educ. Ass'n*, 629 F.3d 992, 998-99 (9th Cir. 2010) (taking judicial notice of official information posted on a governmental website, the accuracy of which was undisputed); *United States v. Camp*, 723 F.2d 741, 744 n. ** (9th Cir. 1984) (taking judicial notice of a verifiable public record).

Dudum filed suit in federal court seeking injunctive relief against San Francisco and its election officials (collectively "San Francisco" or "the City"). Principally, Dudum maintains that when more than four candidates run for a particular office, the restricted IRV system precludes some groups of voters from participating to the same extent as others. That argument is premised on an analogy: It would be unconstitutional, Dudum asserts, to prevent qualified voters from casting ballots in a runoff election; "exhausting" the ballot of a voter who would have ranked more than three candidates if allowed to do so, Dudum contends, is no different. Dudum also points out that the City's Charter declares that "exhausted" ballots are " *not counted* in further stages of the tabulation," S.F. CHARTER § 13.102(a) (emphasis added), and argues that not including the votes of certain voters in the later tabulation stages once all three of their chosen candidates have been eliminated is similar to disenfranchisement of those voters, and so unconstitutional. In support of those arguments, Dudum points to several recent elections in which significant numbers of ballots were "exhausted" before tabulation was completed, sometimes in numbers greater than the final margin of victory. Dudum maintains that as a result of the mandatory "exhaustion" feature and its impact, the restricted IRV system violates the First Amendment, the Equal Protection and Due Process clauses of the Fourteenth Amendment, and the Civil Rights Act, 42 U.S.C. § 1983. He requests declaratory and injunctive relief prohibiting the City from using the system in future elections.

Dudum challenges only the three-candidate limitation, including the corollary to that limitation that ballots are treated as "exhausted" when three ranked candidates on a ballot are eliminated. Ballots can also be "exhausted" for tabulation purposes under unrestricted IRV. For instance, in both systems, ballots can be "exhausted" when a voter chooses to rank fewer candidates than the system permits and the ranked candidates are eliminated. Likewise, a ballot is "exhausted" if a vote of a given rank would otherwise be attributed to a candidate, but the voter indicated that same rank for more than one candidate. *See* S.F. CHARTER § 13.102(a).

The parties stipulated that several thousand votes have been "exhausted" in each of various elections between 2004 and 2008. For example, in the 2004 supervisorial elections for District Five, 16.2% of all ballots cast were "exhausted" as a result of the elimination of the three candidates ranked on those ballots. The City suggests that the 2004 District Five race was an outlier, pointing to the 2008 supervisorial race for District Nine and the 2006 supervisorial race for District Six. In those races, only 3.4% and 0.2% of ballots were "exhausted" as a result of the elimination of all the candidates ranked on the ballots.

Dudum again points to the 2004 race for District 5 Supervisor, in which 22 candidates were on the ballot and the winner was determined in the 19th stage of tabulations. By that stage, 37.44% of ballots cast had been "exhausted." Of those, voters had exercised all three available choices on 16.2% of the ballots. Because the margin of victory in that election was only 311 votes, the argument goes, those involuntarily "exhausted" ballots may have affected the outcome had they not been limited to the three ranks and so not been "exhausted" before the tabulation was complete.

Agreeing that material facts are not in dispute, the parties filed cross-motions for summary judgment. The district court granted summary judgment for the City on all claims. Dudum appealed.

DISCUSSION A. Overview

"Common sense, as well as constitutional law, compels the conclusion that government must play an active role in structuring elections." *Burdick v. Takushi* 504 U.S. 428, 433, 112 S.Ct. 2059, 119 L.Ed.2d 245 (1992). As a way of "structuring elections," San Francisco's IRV system is fairly innovative in the context of American elections, yet has a historied pedigree.

First developed in the 1870s by W.R. Ware, a professor at the Massachusetts Institute of Technology, instant runoff (or "ranked-choice" or "alternative vote") systems have been used in the United States and elsewhere at various times since then. *See* Issacharoff, *supra*, at 1095; Jeffrey C. O'Neill, *Everything That Can Be Counted Does Not Necessarily Count*, 2006 MICH. ST. L. REV. 327, 334. Australia, Ireland, and London use IRV for certain elections, *see* Issacharoff, *supra*, at 1095, and several U.S. cities use versions of the restricted IRV system at issue here, including Oakland and Berkeley, California, and Minneapolis, Minnesota, among others. *See* CHARTER OF THE CITY OF OAKLAND, § 1105(k)(1); BERKELEY MUNICIPAL CODE § 2.14.030(A); MINNEAPOLIS MUNICIPAL CODE § 167.30.

Like all electoral systems, including widely-used systems such as plurality voting and two-round runoff elections, IRV offers a "package[] of potential advantages and disadvantages." Issacharoff, *supra*, at 1089. Dodgson's disappointed "desideratum" observation, made in 1877, remains true. To this day, "there is no such thing as the perfect electoral system." David M. Farrell, ELECTORAL SYSTEMS: A COMPARATIVE INTRODUCTION 47 (2001).

For instance, in the familiar simple plurality system, sometimes called "first-past-the-post" elections, voters chose one candidate, and the winner is the candidate with the most votes. *See id.* at 19. Plurality voting is widely used in the United States for single-office elections, including races for mayors and governors. *See* Amy, *supra*, at 142.

Plurality voting has the benefit of simplicity: It is easy for voters to use, and also easy for voters to understand how their votes are tabulated and the winning candidate determined. *Id.* at 143. Plurality voting also avoids the expense and burden of holding a runoff election. *Id.*

But the system has less auspicious features as well. In contests with several candidates, it privileges candidates with a robust and organized core of support, even if they are strongly disapproved of by most of the electorate. *Id.* at 144; Farrell, *supra*, at 21-26. Likewise, plurality voting allows a candidate to win with a small minority of the total votes cast when many candidates are on the ballot. Amy, *supra*, at 144; Farrell, *supra*, at 26.

A two-round runoff system, sometimes called a "double-ballot" election, *see* Peter C. Fishburn, *Social Choice and Plurality-like Electoral Systems, in* ELECTORAL LAWS AND THEIR POLITICAL CONSEQUENCES 193, 195 (Bernard Grofman ed., 1986), similarly has both significant strengths and trouble-some weaknesses. In such a system, long used in many local elections and in some state races, voters select a single candidate in the first round of voting, much like plurality voting. If no candidate receives a majority of the vote, a second round of voting is held, in which voters choose between the two candidates who received the highest number of votes in the first round. *See* Amy, *supra*, at 147. Two-round runoff systems result in the election of candidates with majority support of those voters who turn out for the second election. *Id.* at 148.

The two-round runoff system is distinct from, yet similar to, party primaries, in which political parties select a nominee to run in a general election. *See generally Cal. Democratic Party v. Jones*, 530 U.S. 567, 572-82, 120 S.Ct. 2402, 147 L.Ed.2d 502 (2000) (discussing state regulation of party primary systems).

That majority support, however, is misleading in some respects. When the second- and third-place candidates, or second-, third-, and fourth-place candidates, are relatively close in a first-round election, a runoff scheme can arbitrarily eliminate a candidate who might otherwise have won the election at the runoff stage. *Id.* at 150. Also, an elected candidate will likely receive support from voters who strongly preferred candidates eliminated in the first-round election, as voters may choose between the two candidates left standing on a "lesser of two evils" basis. And, of course, the system requires the expense and burden of holding two separate elections, *id.* at 149, and results in two different, albeit overlapping, electorate pools, the relative sizes of which can be affected by the choice of dates for the runoff round. *Id.* at 149-50.

For example, in San Francisco's 2010 supervisorial election for District 10, the top five candidates received the following percentages of all first-choice votes: Lynette Sweet, 12.07%; Tony Kelly, 11.80%; Malia Cohen, 11.78%; Marlene Tran, 11.51%; and Steve Moss, 11.06%. Cohen received only 5 fewer first-rank votes than Kelly. But, in a two-round run-off system, Cohen would not have proceeded to the runoff election. As it turned out, Cohen won the election under the City's IRV system, because she garnered more second-and third-choice votes than any other candidate. *See* City and County of S.F. Dep't of Elections Website, Official Ranked-Choice Results Rep., Nov. 2, 2010 Consolidated Statewide Direct Primary Election, Bd. of Supervisors, Dist. 10, *available at* http://www. sfelections.org/results/20101102/data/dl O. html (last visited May 12, 2011) [hereinafter 2010 Election Results].

Unrestricted and restricted IRV systems eliminate the need for a separate runoff and ordinarily will result in the election of a candidate with more wide-spread support than would simple plurality voting. *See id.* at 55; Farrell, *supra*, at 65. **IRV** systems also tend to produce fewer votes cast only for losing candidates — in academic parlance, "wasted votes" — than does straight plurality voting, because votes that would otherwise be cast for losing candidates can be redistributed to candidates with a chance of winning. Likewise, IRV systems "allow[] the voters more say over who they want to represent them: if it is not to be their first choice, then they can choose a second." Farrell, *supra*, at 65.

See Amy, *supra*, at 16 ("Wasted votes are votes that do not elect someone. If your candidate loses, you have cast a wasted vote.").

Under restricted or unrestricted IRV, a candidate who did not receive the most number of first-choice votes can be elected. Whether that feature is a disadvantage or an advantage is, of course, debatable. Where, for instance, there is no candidate with a majority, and the vote spread between the top plurality candidates is small, the more nuanced IRV systems can be seen as better tests of the depth of voter support for each candidate than a simple first-past-the-post plurality system. Additionally, while both IRV systems allow voters to rank their preferences, neither system allows voters to *reconsider* their choices after seeing which candidates have a chance of winning. In other words, voters must submit their preferences before polls close, and, even though they might have chosen differently with more specific information about other voters' selections, they are not provided an opportunity to revise their choices. *See* Farrell, *supra*, at 173. A two-round runoff system, in contrast, provides voters that opportunity through a new round of balloting in a runoff election. Finally, both IRV systems are unfamiliar to many voters, and so some voters might not entirely understand how their votes will affect the election. See Amy, *supra*, at 156.

To illustrate: In San Francisco's 2010 supervisorial election for District 2, Janet Reilly won the highest percentage of all the first-choice votes (41.08%), and Mark Farrell received the second highest percentage of those votes (40.26%). Farrell ultimately won the election, because he received more second-choice votes in the second (and final) calculation stage than did Reilly. *See* 2010 Election Results, Bd. of Supervisors, Dist. 2, *available at* http://www.sfelections.org/results/20101102/data/d2.html (last visited May 12, 2011). In other instances, the plurality winner after the first stage will eventually be elected. For example, in the 2010 supervisorial election for District 6, Jane Kim received the highest percentage of all first-choice votes (31.40%) and was eventually elected, after twelve stages of calculation. *See* 2010 Election Results, Bd. of Supervisors, Dist. 6, *available at* http://www.sfelections.org/results/20101102/data/d6.html (last visited May 12, 2011).

A voting system called "Condorcet" voting addresses a related problem. In Condorcet voting, each voter ranks his candidate preferences, and the winner is determined by considering all pairwise contests between candidates. "For example, for three candidates (A, B, and C), there are three pairwise contests (A-B, A-C, and B-C). The winner is the candidate who wins all of her pairwise contests." O'Neill, *supra*, at 335. Like IRV, Condorcet voting does not require two elections, and academics tend to like it because it selects candidates who are highly rated by the majority of voters. But it has problems as well: It allows for the election of a candidate with few first-place votes. Moreover, when there are more than two candidates, the system can fail to produce a winning candidate (e.g., A beats B, B beats C, and C beats A). *See* Amy, *supra*, at 188-89; Merrill, *supra*, at 15; O'Neill, *supra*, at 337-38 337 n. 64.

Moreover, all voting systems in elections with more than two candidates can be manipulated through strategic voting. *See* Farrell, *supra*, at 171-74; Fishburn, *supra*, at 198; O'Neill, *supra*, at 340-41. In a plurality voting scheme, a voter might choose a candidate who is not his first-choice preference, but who he believes has a realistic chance of winning. In a two-round runoff system, a voter might cast a vote in the first-stage election for a weak candidate, so that his actual first-choice candidate will face that weak candidate in the runoff. See Fishburn, *supra*, at 199. The risk of strategic voting exists in IRV but is less severe than in plurality voting or the first stage of a runoff election: Voters are more free to vote their true preferences, because they face less of a threat of having their votes entirely "wasted" on unsuccessful candidates. See Amy, *supra*, at 52; Merrill, *supra*, at 105; O'Neill, *supra*, at 340.

In sum, restricted IRV, like every election system, offers a menu of benefits and limitations. But that observation does not mean it is a constitutionally acceptable system, so we now turn to Dudum's constitutional objections to the City's restricted IRV system.

B. The Burden on Voters

Restrictions on voting can burden equal protection rights as well as "interwoven strands of `liberty`" protected by the First and Fourteenth Amendments — namely, "`the right of individuals to associate for the advancement of political beliefs, and the right of qualified voters, regardless of their political persuasion, to cast their votes effectively.`" *Anderson v. Celebrezze*, 460 U.S. 780, 787, 103 S.Ct. 1564, 75 L.Ed.2d 547 (1983) (quoting *Williams v. Rhodes*, 393 U.S. 23, 30, 89 S.Ct. 5, 21 L.Ed.2d 24 (1968)). At the same time, and even though "voting is of the most fundamental significance under our constitutional structure," "States retain the power to regulate their own elections." *Burdick*, 504 U.S. at 433, 112 S.Ct. 2059 (internal quotations omitted). As our short review has indicated, each available election system, "`whether it governs the registration and qualifications of voters, the selection and eligibility of candidates, or the voting process itself, inevitably affects — at least to some degree — the individual's right to vote.`" *Id.* (quoting *Anderson*, 460 U.S. at 788, 103 S.Ct. 1564).

Recognizing the need of States and municipalities "to assure that elections are operated equitably and efficiently," *id.*, we apply a "flexible standard" when considering constitutional challenges to election regulations:

A court considering a challenge to a state election law must weigh "the character and magnitude of the asserted injury to the rights protected by the First and Fourteenth Amendments that the plaintiff seeks to vindicate" against "the precise interests put forward by the State as justifications for the burden imposed by its rule," taking into consideration "the extent to which those interests make it necessary to burden the plaintiffs rights."

Id. at 434, 112 S.Ct. 2059 (quoting *Anderson*, 460 U.S. at 789, 103 S.Ct. 1564). When the burdens on voting imposed by the government are "severe," strict scrutiny applies, and the "regulation must be `narrowly drawn to advance a state interest of compelling importance.`" *Id.* (quoting *Norman v. Reed*, 502 U.S. 279, 289, 112 S.Ct. 698, 116 L.Ed.2d 711 (1992)). But voting regulations are rarely subjected to strict scrutiny. *See Lemons v. Bradbury*, 538 F.3d 1098, 1104 (9th Cir. 2008). We have repeatedly upheld as "`not severe' restrictions that are generally applicable, even-handed, politically neutral, and . . . protect the reliability and integrity of the election process." *Rubin v. City of Santa Monica*, 308 F.3d 1008, 1014 (9th Cir. 2002). Where non-severe, "[l]esser burdens" on voting are at stake, we apply "less exacting review, and a State's important regulatory interests will usually be enough to justify reasonable, nondiscriminatory restrictions." *Timmons v. Twin Cities Area New Party*, 520 U.S. 351, 358, 117 S.Ct. 1364, 137 L.Ed.2d 589 (1997) (internal quotations omitted); *see also Caruso v. Yamhill County ex rel. Cnty. Comm'r*, 422 F.3d 848, 859 (9th Cir. 2005).

Dudum does not suggest separate analyses for his First Amendment, Due Process, or Equal Protection claims. The Supreme Court has addressed such claims collectively using a single analytic framework. *See Anderson*, 460 U.S. at 787 n. 7, 103 S.Ct. 1564 ("[W]e base our conclusions directly on the First and Fourteenth Amendments and do not engage in a separate Equal Protection Clause analysis. We rely, however, on the analysis in a number of our prior election cases resting on the Equal Protection Clause of the Fourteenth

Amendment."); *LaRouche v. Fowler*, 152 F.3d 974, 987-88 (D.C. Cir. 1998) (using "a single basic mode of analysis" for such claims). We do the same here.

We have already explained some of the structural limitations inherent in restricted IRV. For instance, voters are unable to reconsider their choices after seeing which candidates have a chance of winning, and some voters might be unfamiliar with the system. Dudum does not, however, challenge those inherent features of the City's IRV system. Instead, Dudum concentrates on challenging the three-rank restriction aspect of San Francisco's system. We consider below the characteristics of restricted IRV Dudum does challenge, to determine the degree to which those features burden voters' constitutional rights, if at all, and if so, whether the burdens are so severe as to trigger strict scrutiny.

1.

Dudum first contends that the treatment accorded "exhausted" ballots as the vote tabulation proceeds under the City's restricted IRV scheme is akin to prohibiting certain voters from voting in an election, and so imposes a severe, or at least a serious, burden on voters' constitutional rights. To support that characterization, Dudum points out that IRV replaced a two-round runoff system, and that explanations of how IRV works often analogize the successive vote calculation steps to a series of elections. For instance, the supervisors who supported adoption of Proposition A stated in their official ballot argument that "[t]he `instant' runoff works much like December's `delayed' runoff."

But the analogy is just that — an analogy. Upon examination, the analogy is off the mark in describing the real impacts of restricted IRV on voters' opportunities to cast ballots.

In actuality, all voters participating in a restricted IRV election are afforded a single and equal opportunity to express their preferences for three candidates; voters can use all three preferences, or fewer if they choose. Most notably, once the polls close and calculations begin, no new *votes* are cast. To determine the winner of the election based on that single set of votes cast, restricted IRV uses an algorithm. The ballots, each representing three or fewer preferences, are the initial inputs; the sequence of calculations mandated by restricted IRV is used to arrive at a single output — one winning candidate. The series of calculations required by the algorithm to produce the winning candidate are simply steps of a single tabulation, not separate rounds of voting.

An algorithm is "any well-defined computational procedure that takes some value, or set of values, as *input* and produces some value, or set of values, as *output.* An algorithm is thus a sequence of computational steps that transform the input into the output." Thomas H. Cormen, *et al.*, INTRODUCTION TO ALGORITHMS 5 (2d ed. 2002); *see also* 1 NEW ENCYCLOPAEDIA BRITANNICA 266 (15th ed. 2007) (defining algorithm as a "systematic mathematical procedure that produces — in a finite number of steps — the answer to a question or the solution of a problem").

In contrast, a two-round runoff system involves at least two rounds of voting, or *inputs*, explaining why it is sometimes referred to as a "double-ballot" election. *See* Fishburn, *supra*, at 195. For instance, in a two-round runoff system, even if a voter's chosen candidate in the first round successfully proceeds to the runoff election, that voter is still afforded an opportunity in the runoff election to select a different candidate, or not to vote at all. In a restricted IRV system, in contrast, if that voter chooses a successful candidate in one round, he is *not* afforded the

opportunity to switch his vote to a different candidate as the tabulation progresses. That is so because restricted IRV considers only one round of inputs, i.e., votes.

Restricted IRV, of course, can be used *in place of* a two-round runoff election, which is what occurred in San Francisco and explains why the city supervisors compared the two. But restricted IRV does not *replicate* a two-round runoff system because, as we just explained, in two-round runoffs, voters cast ballots twice — that is, make and record their choices twice — whereas IRV allows only one chance to vote.

Dudum's contention that restricted IRV threatens to exclude some voters from *voting* is therefore incorrect. The contention sidesteps the basic fact that there is only one round of voting in restricted IRV.

Aside from his two-round analogy, Dudum points to several cases in which qualified individuals were denied an opportunity to vote on certain issues and the resulting burden on the right to vote was treated as significant. But because restricted IRV involves only one round of voting, those cases are inapplicable here.

Partnoy v. Shelley, 277 F.Supp.2d 1064 (S.D.Cal. 2003), for example, concerned a requirement that, unless voters voted either "yes" or "no" on the recall of a governor, their votes on any successor candidates for governor would not be counted. *Id.* at 1071. The defendants argued that the recall and the successor issues were part of one compound question, and no one was prevented from voting on that one question. The court disagreed, reasoning that the voters were faced with two separate questions and holding that it would be a severe burden to force voters to choose between either voting on an issue upon which they did not want to vote or having their votes for a gubernatorial successor not counted. *Id.* at 1074-75. The court held the requirement unconstitutional, because it concluded that the state failed to advance narrowly-tailored compelling interests to justify it. *Id.* at 1079.

Assuming it was correctly decided — which we do not determine — *Partnoy* is not instructive here. In that case there were two questions before the voters: Should the governor be recalled? If so, who should succeed him? Those two questions were conceptually separate; a voter could wish to express a view on only one of the questions, or have a strategic reason to vote on one but not the other. In contrast, voters in the San Francisco elections are asked to cast a vote on *one* issue: Who should be elected to the particular office?

Nor is *Ayers-Schaffner v. DiStefano*, 37 F.3d 726 (1st Cir. 1994) — again, assuming without deciding that we would decide it the same way as did the First Circuit — at all instructive. In that case, after concluding that an election was defective, the state ordered a second curative election but limited participation to people who had voted in the original balloting. *Id.* at 727. The court held that the state's restriction imposed a severe burden on the excluded voters' right to vote, *id.* at 728, and, as the state failed to advance compelling interests justifying the limitation, it was unconstitutional. *Id.* at 730.

The problem in *Ayers-Schaffner* was that otherwise eligible voters were not allowed to vote in a determinative election. Here, to reiterate, voters who participate in the restricted IRV system are not excluded from any election or opportunity to vote, so no comparable burden is imposed on voting rights.

Finally, Dudum notes that in two-round runoff elections, some jurisdictions use an IRV-like system to tabulate the votes from certain absentee ballots. *See* ARK. CODE § 7-5-406; S.C. CODE § 7-15-405. According to Dudum, IRV must be equivalent to a series of elections, because in those jurisdictions absentee voters have votes counted using an IRV-like approach in more than one election.

This example is not particularly relevant, as it concerns a hybrid system which, unlike the San Francisco IRV scheme, *does* treat groups of voters differently with regard both to numbers of ballots cast and to the method of tabulating the ballots. The hybrid system, in effect, adds together apples and oranges: Absentee voters, a small subset of the electorate, must rank their choices among a large pool of candidates on a single ballot; in-person voters, in contrast, cast two ballots, and in the runoff round choose between only two candidates. The hybrid system is one of convenience given the time delays. But it is a less-than-perfect way for the absentee voters to participate in the second-round runoff election — albeit better than not participating at all.

If anything, properly understood, Dudum's example highlights that IRV is *not* equivalent to two-round runoff elections: In the hybrid system, each in-person voter has the opportunity to vote differently in the runoff, even if he voted in the first-round for a candidate who continues to the second round; in contrast, an absentee voter who voted for a candidate who makes the runoff has his vote automatically cast again for that candidate, even if he would now prefer the other candidate. In other words, the absentee voter is not afforded the same opportunity as in-person voters to reassess his preferences in the runoff election; the in-person voter *votes* twice using two ballots, but the absentee voter *votes* once using a single ballot. Pure IRV systems, like the City's, do not involve any such differential treatment of voters. All voters can rank up to three choices on a single ballot, cast those ballots at the same time, and have their preferences calculated in the same manner.

We, of course, express no views on the constitutionality of this hybrid election system.

In sum, the City's restricted IRV system is not analogous to limitations on voting in successive elections, because in San Francisco's system, no voter is denied an opportunity to cast a ballot at the same time and with the same degree of choice among candidates available to other voters. Neither Dudum's analogies nor the cases he relies upon persuade us that the City's election system imposes any serious burdens on voters' constitutional rights by providing unequal opportunities to cast ballots.

2.

Aside from characterizing San Francisco's restricted IRV system as a limitation on casting ballots, Dudum tries a second tack: He maintains that the tabulation scheme under San Francisco's system burdens voters' constitutional rights to vote by effectively discarding, rather than counting, the votes from "exhausted" ballots.

In support of this characterization, Dudum points to the text of two provisions in the San Francisco Charter: First, according to the Charter, voters whose ballots are "exhausted" do not have their ballots "counted in further stages of the tabulation." S.F. CHARTER § 13.102(a). Second, a candidate wins the election when he receives "a majority of the votes from the continuing ballots," meaning the nonexhausted ballots. *Id.* § 13.102(c) (d) (emphasis added).

Dudum reads this text as meaning that "exhausted" ballots are discarded, and so not counted, in determining the election's ultimate outcome.

An examination of how restricted IRV works, however, indicates that the supposed inequity Dudum has identified is one of surface appearances and semantics, not substance. The algorithm used to determine the winner in an election conducted pursuant to the City's IRV system can be elaborated so that the outcome is mathematically identical, yet the features forming the basis of Dudum's characterization of the system as not counting some votes disappear. In essence, a more complete explication of the tabulation process demonstrates that "exhausted" ballots *are* counted in the election, they are simply counted as votes for losing candidates, just as if a voter had selected a losing candidate in a plurality or runoff election.

To illustrate, the tabulation scheme could be spelled out and recorded more fully than it is now as follows: When a candidate receives the fewest votes in a stage, any ballots that would otherwise be "exhausted" by that candidate's last-place finish could continue to be reflected as a vote for that candidate in subsequent rounds. Votes that the candidate received from ballots with second- or third-choice candidates remaining would still be transferred to the second- or third-choice candidates. In other words, even though last-place candidates could no longer mathematically win the election, and could not obtain further votes, one could clutter the tabulation process by showing their votes on the tabulation tables even after they had been proven incapable of prevailing. The winner could then be defined as the candidate who receives a plurality of the *total votes cast* (including votes cast for candidates mathematically eliminated in prior stages), as long as he also receives a majority of the votes cast for candidates who were not mathematically eliminated previously. As this example illustrates, the restricted IRV system does *not* necessarily produce a majority result; a plurality of the total votes cast can prevail, as the majority is only of the last stage of calculation, when many candidates have been mathematically eliminated. *Cf.* Merrill, *supra*, at 13 (characterizing IRV as a plurality system).

One might question why receiving a majority of the votes cast for non-eliminated candidates should be the triggering event ending the election. That is, why shouldn't the final step occur when all the recorded votes have been distributed in accord with the tabulation rules, with the winning candidate being the person with more votes than the other remaining candidate after the losers are eliminated and their votes redistributed?
The answer is that, if a candidate receives a majority of the votes cast for non-eliminated candidates, it is mathematically impossible for that candidate to lose if the tabulation is extended until all ranked votes are distributed. To see why that is so, consider an election in which, after several IRV tabulations, 100 ballots containing votes for non-eliminated candidates remain. Candidate A receives 51 of those votes. The votes attributable to him can be thought of as the numerator, and that number plus the remaining 49 votes (spread over the other non-eliminated candidates) the denominator. In later stages of tabulation, the votes counted in the denominator may be redistributed, but the denominator can never *increase* beyond 100 votes. Thus, even if no further votes are attributed to candidate A, he will always have at least 51 % of the votes cast for non-eliminated candidates. And, in fact, the denominator could very well *decrease* as candidates are mathematically eliminated, and last-ranked votes continue to be recounted for those eliminated candidates (rather than being redistributed to non-eliminated candidates and retained in the denominator). Of course, if the denominator decreases, or if more votes are distributed to candidate A, his majority position can only increase.
It is true that further rounds of tabulation might affect the ultimate vote distribution for non-

winning candidates. Imagine that candidates B, C, and D have 24, 13, and 12 votes respectively (totaling 49 votes) when candidate A receives his 51 votes. If, after candidate D is eliminated, every vote attributed to him is redistributed to candidate C, then candidate C will have one vote more (25 votes) than candidate B (24 votes). But no matter how the non-elected candidates are ranked, candidate A wins. Thus, there is no practical difference (in terms of who will be elected) between ending the tabulation when only two candidates remain or when any candidate receives a majority of the votes cast for non-eliminated candidates.
Moreover, in addition to maintaining a *majority* of the votes cast for non-eliminated candidates, candidate A will always have a *plurality* of the total votes cast: As we just explained, his 51 votes will always be more than any of the non-eliminated candidates. Likewise, each previously eliminated candidate at some point received the fewest votes in a stage, meaning, of course, fewer votes than candidate A. Moreover, the respective vote totals of each previously eliminated candidate can only *decrease* thereafter — they cannot obtain further votes, and some of the 1 stand 2nd-rank votes that were attributed to them likely will have been distributed to the 2nd- and 3rd-choice candidates on those ballots.

Dudum does not dispute the legality of plurality systems. Rather, he presents simple plurality voting as a preferable alternative to restricted IRV. We are aware of no successful challenge to plurality voting generally. *Cf. Edelstein v. City Cnty. of S.F.*, 29 Cal.4th 164, 183, 126 Cal.Rptr.2d 727, 56 P.3d 1029 (Cal. 2002) ("Plurality rule is not anathema to the federal or state Constitutions.").

This "show your work" alternative — to quote many high school teachers — is more cumbersome than San Francisco's actual tabulation regime, but it accomplishes precisely the same result. As pertinent to Dudum's challenge, the rephrasing makes explicit what is implicit in the current scheme: "Exhausted" ballots *are* counted in the election, they are just counted for losing candidates in the tally of total votes. In the terms used by election experts, these are "wasted" votes, not because they aren't counted, but because they were cast for candidates not ultimately elected. Notably, both IRV and restricted IRV tend to result in *fewer* entirely "wasted" votes than plurality voting, because voters whose first-choice candidate is eliminated may choose the winning candidate as their second- or third-choice pick. See Amy, *supra*, at 155.

A voter might regard as objectionable San Francisco's IRV system, even as thus more fully reticulated, because he would prefer to have his vote recorded in the final step of tabulation in favor of his first-choice candidate rather than his third-choice pick. Such an objection would have little force, as the election results reported by the City would reflect the first-choice vote up until the tabulation stage in which the designated candidate received the fewest votes and so could not prevail. Alternatively, a voter could decide to vote for only one candidate, and the ballot would be recorded as a vote for that candidate throughout the tabulation process and in the final election report.

All this is to say that "exhausted" ballots represent votes for losing candidates. "Exhausted" ballots are not disregarded in tabulating election results, and the result of not "counting" them is identical to counting them while explicitly recognizing that the system often produces a winner who attains a plurality, not a majority, of the total votes cast. Given this substantive equivalence, Dudum's objection that votes may not be "counted" at the determinative tabulation steps reflects only the Charter's current *phrasing*, not any actual burden on voting rights.

The only court to have addressed a similar argument has reached the same conclusion. At issue in *McSweeney v. City of Cambridge*, 422 Mass. 648, 665 N.E.2d 11 (1996), was an unrestricted form of preferential voting called the "single transferable vote." Rejecting the argument that voting rights were seriously burdened because "exhausted" ballots are not counted in the election, the court noted that "[exhausted ballots] too are read and counted; they just do not count toward the election of any of the nine successful candidates. Therefore it is no more accurate to say that these ballots are not counted than to say that the ballots designating a losing candidate in a two-person, winner-take-all race are not counted." *Id.* at 652, 665 N.E.2d 11; *see also Moore v. Election Comm'rs of Cambridge*, 309 Mass. 303, 319, 35 N.E.2d 222 (1941) (reaching the same conclusion), *abrogated on other grounds as recognized in McSweeney*, 422 Mass. at 653-54, 665 N.E.2d 11.

The "single transferable vote" system resembles IRV but it is used to elect multiple candidates to a representative body, whereas IRV is used to elect a single candidate to office. *See* Issacharoff, *supra*, at 1096.

McSweeney went on to decide the case on different grounds, but its reasoning on the counting argument mirrors our own.

In short, Dudum's contention that the City's system discards votes is incorrect. Instead, the system "counts" all the ballots, but the final tabulation recognizes that some of the ballots ranked only losing candidates. Like his inaccurate comparison of the algorithm used in restricted IRV to a series of elections, Dudum's "counting" argument reveals an at most minimal — and perhaps nonexistent — burden on voters' constitutional rights.

3.
Dudum's final contention regarding the voting burden imposed by the restricted IRV system is that even if restricted IRV does not prevent some voters from voting (it doesn't, as we explain above), and even if all votes are counted (they are, for the reasons just given), San Francisco's restricted IRV system is nonetheless unconstitutional because it results in the *dilution* of certain votes. Specifically, Dudum maintains that "some voters — those who vote for continuing candidates — only have one vote counted in `the election'; other voters, however, have votes counted for three different candidates." Therefore, the argument goes, the City's IRV system violates the equal protection guarantee of "one person, one vote." *See Bd. of Estimate of New York v. Morris*, 489 U.S. 688, 692, 109 S.Ct. 1433, 103 L.Ed.2d 717 (1989) (quoting *Reynolds v. Sims*, 377 U.S. 533, 565, 84 S.Ct. 1362, 12 L.Ed.2d 506 (1964)). At its core, Dudum's argument is that some voters are literally allowed more than one vote (i.e., they may cast votes for their first-, second-, and third-choice candidates), while others are not.

The "one person, one vote" cases involve instances in which citizens from heavily-populated districts select the same number of legislative representatives as voters from sparsely populated districts, with the result that their votes have less potential impact on the legislative process. *See Reynolds*, 377 U.S. at 563, 84 S.Ct. 1362. To rectify that "dilution" problem, the Supreme Court has interpreted the Equal Protection Clause to require that the seats in state legislatures "must be apportioned on a population basis." *Id.* at 568, 84 S.Ct. 1362; *see also Bd. of Estimate*, 489 U.S. at 693, 109 S.Ct. 1433 (discussing cases).

Once again, Dudum's contention mis-characterizes the actual operation of San Francisco's restricted IRV system and so cannot prevail. In fact, the option to rank multiple *preferences* is

not the same as providing additional *votes*, or more heavily-weighted votes, relative to other votes cast. Each ballot is counted as no more than one vote at each tabulation step, whether representing the voters' first-choice candidate or the voters' second- or third-choice candidate, and each vote attributed to a candidate, whether a first-, second- or third-rank choice, is afforded the same mathematical weight in the election. The ability to rank multiple candidates simply provides a chance to have several preferences recorded and counted *sequentially*, not at once.

Several courts have rejected variants of Dudum's dilution argument. Most recently, *Minnesota Voters Alliance v. City of Minneapolis*, 766 N.W.2d 683 (Minn. 2009), was a challenge to an IRV scheme on the ground that voters whose first-choice candidates were eliminated were afforded multiple opportunities to affect the election. *See id.* at 690. The court rejected that argument, reasoning that votes for continuing candidates were counted throughout the process, and "in each round every voter's vote carrie[d] the same value." *Id.* at 693.

Other courts have reached the same conclusion. *See McSweeney*, 422 Mass. at 652, 665 N.E.2d 11 (noting, in the context of an unrestricted preferential voting scheme, that "it would be misleading to say that some ballots are counted two or more times. Although these ballots are examined two or more times, no ballot can help elect more than one candidate."); *Stephenson v. Ann Arbor Bd. of Canvassers*, No. 75-10166 AW (Mich. Cir.Ct. Nov. 1975) (same).

Dudum attempts to distinguish *Minnesota Voters'?*, rejection of the dilution claim by arguing that San Francisco's system is different than Minneapolis's, because the former restricts voters to choosing three candidates. Dudum's observation, however, either cuts *against* his dilution claim or exposes the dilution argument as just a rehash of his "not counting" argument.

As the parties recognize, the Minneapolis election system actually does limit voters to ranking three candidates. But the court in *Minnesota Voters* did not address that limitation.

If the purported problem is that some voters have votes counted for more than one candidate as the tabulations progress (although never for more than one at any tabulation stage), then *restricting* the number of candidates voters can rank should reduce Dudum's dilution concerns, not exacerbate them. And insofar as Dudum's dilution argument shifts to a concern that the voters whose ballots become "exhausted" have their votes diluted because their votes do not "count" in the determinative calculation stages, we have already explained that that is so only because their candidates have no chance of prevailing. Any distinction between San Francisco's and Minnesota's systems (as considered in *Minnesota Voters*) therefore does not help Dudum's dilution claim.

* * *

Again, " *every* electoral law and regulation necessarily has *some* impact on the right to vote." *Weber v. Shelley*, 347 F.3d 1101, 1106 (9th Cir. 2003). The City's restricted IRV scheme is no different. Like every electoral system, it offers an amalgam of advantages and disadvantages. The burdens Dudum identifies, however, are largely ephemeral, disappearing upon examination. The restricted IRV scheme does *not* provide disparate opportunities for any voter to cast additional ballots or votes. The appearance that some votes are not "counted" is just a product of how the algorithm operates for efficiency's sake; the result would be identical were the "exhaustion" feature eliminated, and the "exhausted" ballots recorded and counted throughout the process for what they are — votes for losing candidates. As the votes from

"exhausted" ballots *are* taken into account in the election, as much as "wasted" votes ever are, the practical burden on voters is no different than in other election systems. Finally, Dudum's vote dilution argument fails as well, because the ability to rank preferences sequentially does not affect the ultimate weight accorded any vote cast in the election.

We express no views on any characteristics of restricted IRV beyond those discussed.

Therefore, *if* the characteristics of the City's system Dudum has identified impose any burdens on the right to vote, they are minimal at best. For the sake of completeness, we shall assume *some* burden is imposed, however limited, and so consider whether the restricted IRV system serves governmental interests sufficient to justify that minimal at best burden under the flexible balancing analysis. See, *e.g., Burdick*, 504 U.S. at 437, 439, 112 S.Ct. 2059 (holding that "any burden imposed" by the challenged regulation was "a very limited one," but nonetheless considering the governmental interests advanced); *Lemons*, 538 F.3d at 1104 (weighing the pertinent governmental interests, even though the burdens imposed were "minimal").

C. The Governmental Interests

Because restricted IRV does not impose severe burdens on voting rights, we do not apply strict scrutiny. *See, e.g., Timmons*, 520 U.S. at 358, 117 S.Ct. 1364; *Pest Comm. v. Miller*, 626 F.3d 1097, 1106 (9th Cir. 2010). And here, the City's "important regulatory interests" are more than substantial enough to justify the minimal at best burdens imposed by the City's chosen system. *Timmons*, 520 U.S. at 358, 117 S.Ct. 1364; *Nader v. Cronin*, 620 F.3d 1214, 1217 (9th Cir. 2010).

1.

Before addressing the City's proffered interests, we emphasize that the City is *not* required to show that its system is narrowly tailored — that is, is the one best tailored to achieve its purposes. *See Timmons*, 520 U.S. at 358, 117 S.Ct. 1364. Latching onto a phrase from *Anderson v. Celebrezze*, Dudum contends otherwise, insisting that the governmental restrictions must be " *necessary* to burden the plaintiffs rights," 460 U.S. at 789, 103 S.Ct. 1564 (emphasis added). But later cases refute Dudum's reading of *Anderson*, making clear that when a challenged rule imposes only limited burdens on the right to vote, there is no requirement that the rule is the only or the best way to further the proffered interests. *See Timmons*, 520 U.S. at 365, 117 S.Ct. 1364 ("[B]ecause the burdens the [challenged] ban imposes on the party's associational rights are not severe, the State need not narrowly tailor the means it chooses to promote [its interests]."); *Pest Comm.*, 626 F.3d at 1110 (holding that the district court correctly applied the flexible balancing test and "was not obliged to consider whether Nevada's system could or should be more narrowly tailored"); *Caruso*, 422 F.3d at 862 (same).

We note that a sliding-scale balancing analysis, rather than pre-set tiers of scrutiny, apply to challenges to voting regulations. Thus, there may be instances where a burden is not severe enough to warrant strict scrutiny review but is serious enough to require an assessment of whether alternative methods would advance the proffered governmental interests. *Cf. Crawford v. Marion Cnty. Election Bd.*, 553 U.S. 181, 190 n. 8, 128 S.Ct. 1610, 170 L.Ed.2d 574 (2008) (opinion of Stevens, J.).

Such respect for governmental choices in running elections has particular force where, as here, the challenge is to an electoral *system*, as opposed to a discrete election *rule* (e.g., voter ID laws, candidacy filing deadlines, or restrictions on what information can be included on ballots). Discrete election rules generally further limited identifiable interests; a reviewing court can assess the likely effects of entirely eliminating the challenged rule. *Cf. Burdick*, 504 U.S. at 430, 112 S.Ct. 2059 (state prohibition on write-in voting); *Anderson*, 460 U.S. at 782, 103 S.Ct. 1564 (state early-filing deadline); *Rubin*, 308 F.3d at 1011 (regulation prohibiting a candidate from designating himself a "peace activist" on the election ballot). In contrast, the City must use *some* overall system for casting ballots, tabulating votes, and determining the outcome of elections. It cannot select a system that best serves *all* the multiplicity of interests implicated in an election, as no such system exists. Moreover, given the need to adopt some overall election system, we cannot as a practical matter assess the likely effects of eliminating one election system without considering what system would replace it, and what new burdens that replacement choice would likely impose.

Dudum challenges only the three-candidate limitation, not IRV generally. In light of that limited challenge, one would expect Dudum to argue that the interests advanced by the City *in favor of the three-candidate restriction* are inadequate. But Dudum does not contest those specific justifications. Instead, he argues that the interests advanced in favor of IRV *generally* can be served just as well by either a plurality system or a two-round runoff scheme. Dudum's logic seems to be that if the three-candidate limit imposes a burden on voting rights, and if the City maintains that it cannot eliminate that restriction, then restricted IRV should be compared to election systems whose constitutionality is not in question.

In the end, then, Dudum is effectively asking the court to choose between electoral systems (i.e., between restricted IRV, plurality voting, or two-round runoff elections). As explained, however, electoral systems serve diverse interests with various degrees of success. That is why, absent a truly serious burden on voting rights, "it is the job of democratically-elected representatives to weigh the pros and cons of various [election] systems." *Weber*, 347 F.3d at 1107.

2.

The City advances several interests justifying the minimal at best burdens of which Dudum complains. Some of those interests concern the three-candidate restriction, and some support IRV as compared to the two-round runoff system it replaced.

First, the City adduces evidence that (1) the current voting machines cannot process ballots allowing unlimited ranking, and (2) permitting voters to rank more than three candidates might exceed the memory capacity of the machines now in use. The City maintains that the state certification necessary for new voting software or hardware or for redesigned ballots could take months or years, so allowing unlimited choices would disrupt the City's preparation for upcoming elections. Moreover, contends the City, (1) because some elections include many candidates, allowing unlimited rankings would require either extremely large, confusing ballots or multiple ballots for each voter; (2) multiple ballots could lead to calculation errors; and (3) in testing, voters regarded ballots offering four choices as confusing. Notably, Dudum introduced no evidence suggesting that San Francisco *could* conduct unrestricted elections without running into the problems identified, and does not now argue that the City's interests are inadequate to justify the three-candidate restriction.

Assuming for the moment the constitutional validity of IRV systems generally, then, the three-candidate restriction furthers important interests in maintaining the orderly administration of San Francisco's elections and in avoiding voter confusion. *See, e.g., Eu v. San Francisco Cnty. Democratic Cent. Comm.*, 489 U.S. 214, 225-26, 109 S.Ct. 1013, 103 L.Ed.2d 271 (1989) (noting that "protecting voters from confusion" is a "compelling governmental interest"); *Lubin v. Panish*, 415 U.S. 709, 715, 94 S.Ct. 1315, 39 L.Ed.2d 702 (1974) ("[K]eeping . . . ballots within manageable, understandable limits is of the highest order," because "`laundry list' ballots discourage voter participation and confuse and frustrate those who do participate."); *Bullock v. Carter*, 405 U.S. 134, 145, 92 S.Ct. 849, 31 L.Ed.2d 92 (1972) ("[T]he State understandably and properly seeks to prevent the clogging of its election machinery [and] avoid voter confusion."); *Pest Comm.*, 626 F.3d at 1107-08 (recognizing that avoiding voter confusion is an important state interest); *Rubin*, 308 F.3d at 1017 (acknowledging the "legitimate goal of achieving a straightforward, neutral, non-confusing ballot"). So, without more, Dudum's challenge to the three-candidate restriction fails.

Dudum objects that the interests the City now relies on were not advanced upon adoption of Proposition A and so are impermissible *post hoc* rationales. We are far from sure that the normal ability of litigants to advance arguments justifying their out-of-court behavior is suspended in election challenges where, as here, the burden imposed on voting is minimal at best. For instance, in *Timmons v. Twin Cities Area New Party*, the Court expressly relied on a state interest admittedly not advanced in its briefs, but mentioned during oral argument, implying that the interest also was not advanced prior to the litigation (or else the Court presumably would have noted that fact). *See* 520 U.S. at 366 n. 10, 117 S.Ct. 1364.
In any event, the *post hoc* rationale point doesn't matter in this case, as the City's justifications for the three-candidate limit were set forth in the text of Proposition A itself. Proposition A explained that the Director of Elections may limit the number of choices a voter may rank if "the voting system, vote tabulation system or similar or related equipment used by the City and County cannot feasibly accommodate choices equal to the total number of candidates running for each office." S.F. CHARTER § 13.102(b). The interests in avoiding changes to the voting system and equipment that would be confusing or risk seriously disrupting the administration of elections are aspects of the "feasibly accommodate" concern identified in Proposition A, not *post hoc* rationales.

We could stop there, as Dudum purports to challenge only the three-rank restriction, not IRV generally. But even if we expand the comparative inquiry to other election systems, as Dudum would have us do, his challenge fares no better.

The City points to evidence that restricted IRV will save money compared to a two-round runoff system (the election system in place prior to IRV), as each runoff election costs the City between $1.5 million and $3 million. The interest in alleviating the costs and administrative burdens of conducting additional elections can be "a legitimate state objective" that also justifies the use of IRV, given the minimal at best burdens the system imposes on voters' constitutional rights to vote. *See, e.g., Bullock*, 405 U.S. at 147, 92 S.Ct. 849; *Lemons*, 538 F.3d at 1104 (holding that the minimal burden imposed by a state's system for verifying referendum petition signatures was justified by the "administrative burden" another system threatened to impose); *Weber*, 347 F.3d at 1106 (recognizing a state's interest in saving money).

Further, restricted IRV advances the City's legitimate interests in providing voters an opportunity to express nuanced voting preferences and electing candidates with strong plurality

support. *See Storer v. Brown*, 415 U.S. 724, 732, 94 S.Ct. 1274, 39 L.Ed.2d 714 (1974) (noting a state interest in "assur[ing] that the winner is the choice of a majority, or at least a strong plurality, of those voting"). Unlike a two-round runoff election, restricted IRV will not always produce a candidate with majority support. But restricted IRV also does not limit voters' choices to only two candidates, and so it allows voters to express a wider range of preferences. Moreover, in practice, the ability to express more nuanced preferences means that candidates with *greater* plurality support (although not necessarily majority support) tend to be elected, as compared to a traditional plurality system. *See McSweeney*, 422 Mass. at 654, 665 N.E.2d 11 ("[A] preferential scheme, far from seeking to infringe on each citizen's equal franchise . . . seeks more accurately to reflect voter sentiment . . . [and] `to enlarge the possibility of a voter[] being represented therein by giving the voter an opportunity to express more than one preference among candidates.`" (quoting *Moore*, 309 Mass. at 331, 35 N.E.2d 222)).

In sum, we have no difficulty holding that these important governmental interests are more than sufficient to outweigh the extremely limited burdens — if any — that the restricted IRV features Dudum challenges impose upon San Francisco's voters.

CONCLUSION

If the aspects of the City's restricted IRV scheme Dudum challenges impose any burdens on voters' constitutional rights to vote, they are minimal at best. Moreover, the City has advanced valid, sufficiently-important interests to justify using its system. We, of course, express no views on the wisdom of using IRV, restricted IRV, or any other electoral method. There is no perfect election system, and our search for one would prove no more successful than a hunt for the mythical snark. Happily, we are not required to engage in any such endeavor. We hold only that Dudum has not established that the City's chosen system is unconstitutional.

See Lewis Carroll, *The Hunting of the Snark: An Agony in Eight Fits* (MacMillan Co. 1876).

AFFIRMED.

BLUE FOLDER ITEM

Blue folder items are additional back up material to administrative reports and/or public comments received after the printing and distribution of the agenda packet for receive and file.

CITY COUNCIL MEETING
JULY 30, 2024

N.3 DISCUSSION AND POSSIBLE ACTION TO PROVIDE DIRECTION TO STAFF RELATING TO THE DRAFT ORDINANCE AMENDING THE CITY'S MUNICIPAL CODE RELATED TO RANKED CHOICE VOTING AS AN INSTANT RUNOFF MODEL.

- **Sample Ballot 2023-03-07 – CA5 Instant Runoff Election**
- **Resolution No. CC 2006-0610-099 – Break a Tie**
- **Public Comment**
- **Councilmember Nehrenheim - Executive Summary - McCarty RCV Paper**
- **Councilmember Nehrenheim - Final RCV Study**

PROPOSED CHARTER AMENDMENT MEASURE CA5

THE PEOPLE OF THE CITY OF REDONDO BEACH, CALIFORNIA, HEREBY AMEND SECTION 18.4 OF ARTICLE XVIII OF THE CHARTER OF THE CITY OF REDONDO BEACH TO READ AS FOLLOWS:

(NOTE: New provisions or language added to the existing charter section are shown in **BOLDFACE type**; words and figures deleted from the existing charter section are shown in ~~strikeout type~~.)

Sec. 18.4. Majority vote**:** ~~Runoff elections.~~ **Instant runoff election.**

A. ~~Except as provided in this Section with regard to runoff elections, a~~**The City Council must by ordinance provide for an instant runoff voting system in the elections of each city elective office listed in Article VI, Article VIII, and Article X. A** majority (more than half), of the votes cast for all candidates**, or a majority of the operative votes on continuing ballots in subsequent rounds, is required for the election of a candidate to each such office as determined by an instant runoff voting system process detailed in the ordinance the council must enact.** ~~for each City elective office is required for the election of the candidate to such office. In the event no candidate for an elective office receives a majority of the votes cast for all candidates for such office, the two (2) candidates receiving the highest numbers of votes cast for any such office shall thereby qualify as candidates for such office at a runoff election to be held not later than seventy (70) days after such election. In the event that any person qualifies pursuant to law to become a write-in candidate for such office at the runoff election, the candidate who receives a plurality of all the votes cast for such office in the runoff election shall be elected.~~

B. Notwithstanding the foregoing, members of the Board of Education shall continue to be elected by a plurality of votes cast.

*18.4—as added by election 11-4-80; as amended by election 11-6-84 and 3-7-95.

CITY ATTORNEY'S IMPARTIAL ANALYSIS OF MEASURE CA5

Background. The California Constitution gives charter cities such as Redondo Beach "plenary authority" to provide for "the manner in which, the method by which, the times at which, and the terms for which the several municipal officers . . . shall be elected or appointed." Currently Section 18.4 of the Redondo Beach City Charter provides that:

> a majority (more than half), of the votes cast for all candidates for each City elective office is required for the election of the candidate to such office. In the event no candidate for an elective office receives a majority of the votes cast for all candidates for such office, the two (2) candidates receiving the highest numbers of votes cast for any such office shall thereby qualify as candidates for such office at a runoff election to be held not later than seventy (70) days after such election.

The above does not apply to candidates for members of the Board of Education who are elected by a plurality of votes cast.

The Measure. Measure CA5 ("Measure") was placed on the March 7, 2023 General Municipal Election Ballot by the Redondo Beach City Council. Measure CA5 would amend Section 18.4 of the Redondo Beach Charter to eliminate separate runoff elections and require the City Council by ordinance to provide for an instant runoff voting system in the elections of each city elective office.

When there are more than two candidates for one seat, an instant runoff voting system allows voters to rank candidates for that seat in order of preference when marking their ballots. Only one candidate can represent each of the voter's first, second, or third, etc., choices. For all city elective offices with more than two candidates, all first choices are initially tallied. If any candidate receives a majority of the first choices, that candidate is elected just as they would be under the current Charter Section. However, if no candidate receives a majority of first choices, the "instant run-off" process is triggered. The candidate receiving the fewest first choices is eliminated, and the voters for that eliminated candidate now have their second choices counted. The ballots are again tallied and the process continues until one candidate wins a majority. An instant runoff voting system is so named because it allows a majority winner to be determined in just one election. It is a substitute for a separate runoff election.

Measure CA5 is a charter amendment to be implemented by a later ordinance that the City Council would adopt, which will lay out the details of how the instant runoff voting system will work in the City of Redondo Beach. The ordinance will only affect elections for city office and will have no effect on ballot measures for any Federal, State, County, District or Board of Education elections.

s/Michael W. Webb
City Attorney

ARGUMENT IN FAVOR OF MEASURE CA5

Redondo Beach currently votes for it's elected officials in March elections using a traditional voting system. Whichever candidate gets more than 50% of the vote wins.

If no candidate receives more than 50% of the vote, a runoff is held in May. Runoff elections are expensive and have historically been hostile. The 2013 runoff election cost taxpayers nearly an additional $300,000! Runoff elections also tend to have lower voter turnout than the City's March general election.

There is a better alternative election system—instant runoff voting. Using Instant Runoff, Redondo Beach will experience more amicable campaigns at a lower cost.

An instant runoff voting system determines a majority winner in a single, higher-turnout election. The most popular instant runoff system is Ranked-Choice Voting (RCV). With RCV, you rank candidates based on the order you prefer: 1st choice, 2nd choice, 3rd choice, and so on. If your favorite doesn't win, your vote still counts for your next candidate choice.

Voters using RCV in Oakland, San Francisco, San Leandro, Albany, Berkeley and Palm Desert say RCV is simple and they want to continue using it. An Instant Runoff Voting system encourage candidates to focus on issues instead of uncivil attacks on their opponents in hopes of becoming your second choice.

Measure CA5 was unanimously approved by the City Council.

We urge you to vote Yes on Measure CA5, the Redondo Beach Charter Change Amendment to allow instant runoff voting.

For more information, please visit **www.RedondoIRV.org**

s/Laura Emdee
Councilmember, District 5

s/Todd Loewenstein
Councilmember, District 2

s/Christian Horvath
Councilmember, District 3

s/Nils H. Nehrenheim
Mayor Pro Tem

RESOLUTION NO. CC-0610-99

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDONDO BEACH, CALIFORNIA, PROVIDING FOR A PROCEDURE TO RESOLVE TIE VOTES FOR ELECTIVE OFFICES AT GENERAL MUNICIPAL ELECTIONS CONSOLIDATED WITH THE BOARD OF EDUCATION OF THE REDONDO BEACH UNIFIED SCHOOL DISTRICT AND SPECIAL RUN OFF ELECTIONS (IF NEEDED).

WHEREAS, §15651(a) of the Elections Code of the State of California authorizes the City Council, by majority vote, to provide for a procedure to resolve tie votes involving those candidates who received an equal number of votes at any Municipal Election held within the City of Redondo Beach; and

WHEREAS, Section 18.4 of the Redondo Beach City Charter states that a majority (more than half) of the votes cast for all candidates for Municipal Elective Office is required for the election of a candidate to such office; and

WHEREAS, Section 18.4 of the Redondo Beach City Charter states that members of the Board of Education shall be elected by a plurality of votes casts.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF REDONDO BEACH, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. That in the event no candidate for a municipal office qualifies by receiving more than half of the votes cast for that position and an equal number of votes are cast for two or more candidates qualifying for second place, the tie to decide the second place candidate for a run off election as dictated in Section 18.4 of the Redondo Beach City Charter shall be resolved as outlined in Exhibit "A" attached hereto.

SECTION 2. That in the event two or more candidates for a Municipal Elective Office in a run off election receive an equal number of votes creating a tie, the tie shall be resolved as outlined in Exhibit "A" attached hereto.

SECTION 3. That in the event two or more candidates for a position on the Board of Education receive an equal number of votes creating a tie for the qualified positions, the tie shall be resolved as outlined in Exhibit "A" attached hereto.

SECTION 4. That the provisions of Sections 1, 2 and 3 shall apply at the next ensuing municipal election to be held in the City on March 6, 2007, and at each municipal election thereafter.

SECTION 5. That the City Clerk shall certify to the passage and adoption of this Resolution and enter it into the book of original Resolutions.

PASSED, APPROVED AND ADOPTED this 3rd day of October, 2006.

Mike Gin, Mayor

ATTEST:

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS
CITY OF REDONDO BEACH)

I, Sandy Forrest, City Clerk of the City of Redondo Beach, California, do hereby certify that the foregoing Resolution No. CC-0610-99 was duly passed, approved and adopted by the City Council of the City of Redondo Beach, California, at a regular meeting of said City Council held on the 3rd day of October, 2006, by the following roll call vote:

AYES: Aspel, Cagle, Szerlip, Diels, Parsons

NOES: None

ABSENT: None

ABSTAIN: None

Sandy Forrest, City Clerk

APPROVED AS TO FORM:

Michael W. Webb, City Attorney

RESOLUTION NO. CC-0610-99

EXHIBIT "A"

By Lot: The City Council shall forthwith summon the candidates who have received the tie votes, whether upon the canvass of the returns by the Council or upon a recount by a court, to appear before the Council at a time to be designated by the Council. The Council shall, at that time and place, determine the tie by lot (e.g., tossing a coin, etc.), or in order to maintain a sense of dignity in resolving a tie vote, Council may place each candidate's name in an unmarked, sealed envelope. The Mayor will then select a person to draw an envelope and read the name of the winning candidate.

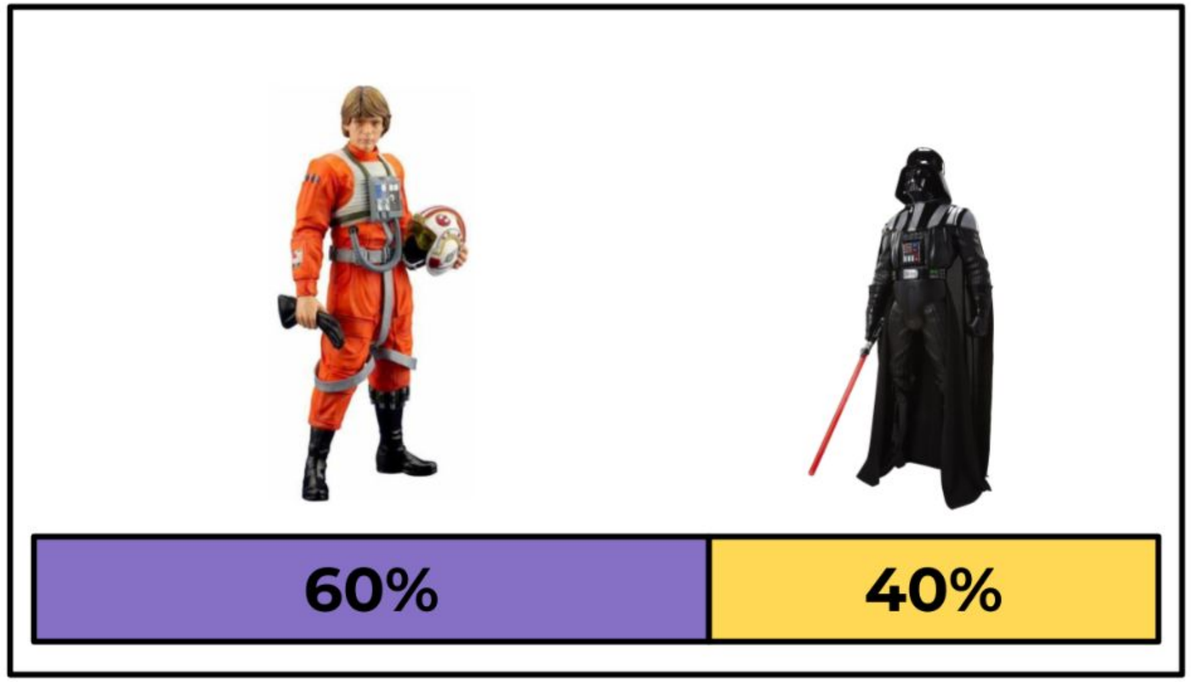
Measuring Public Opinion

The future of the galaxy is at stake. It seems like the frontrunners are either Han Solo or Luke Skywalker, but you prefer Princes Leia.

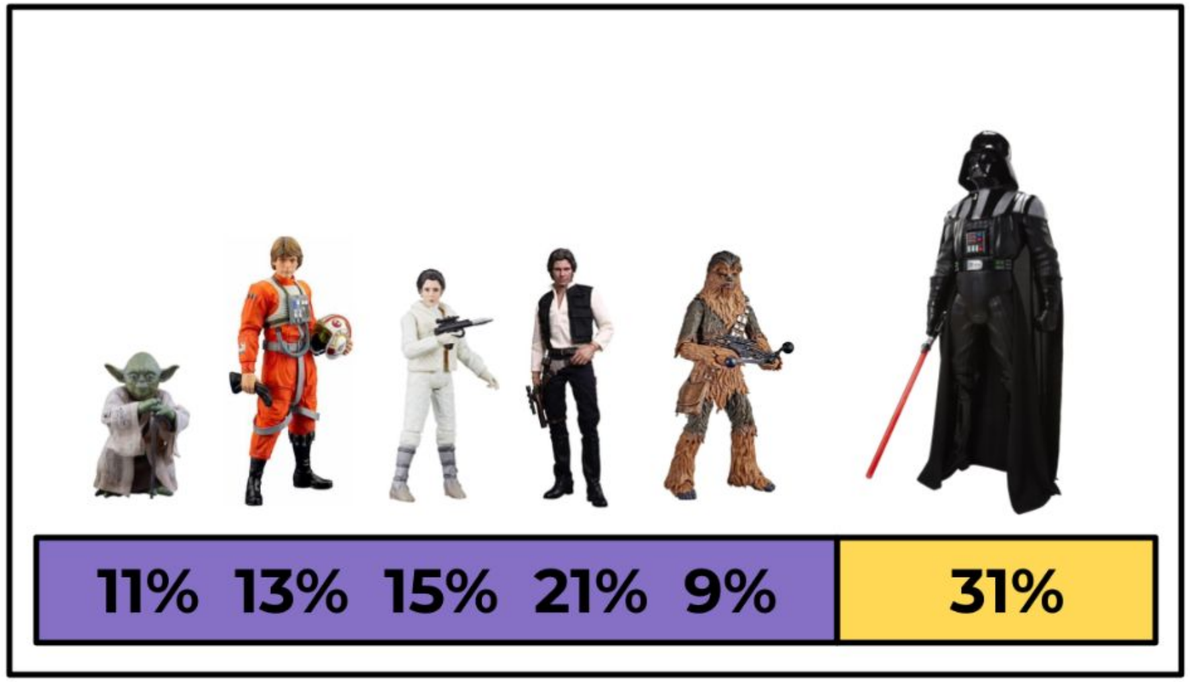
Who would you vote for in a traditional election?
How would you rank these candidates?

PROBLEM : VOTE-SPLITTING

Majority supported factions can split the vote
and end up electing a candidate the voters didn't support.



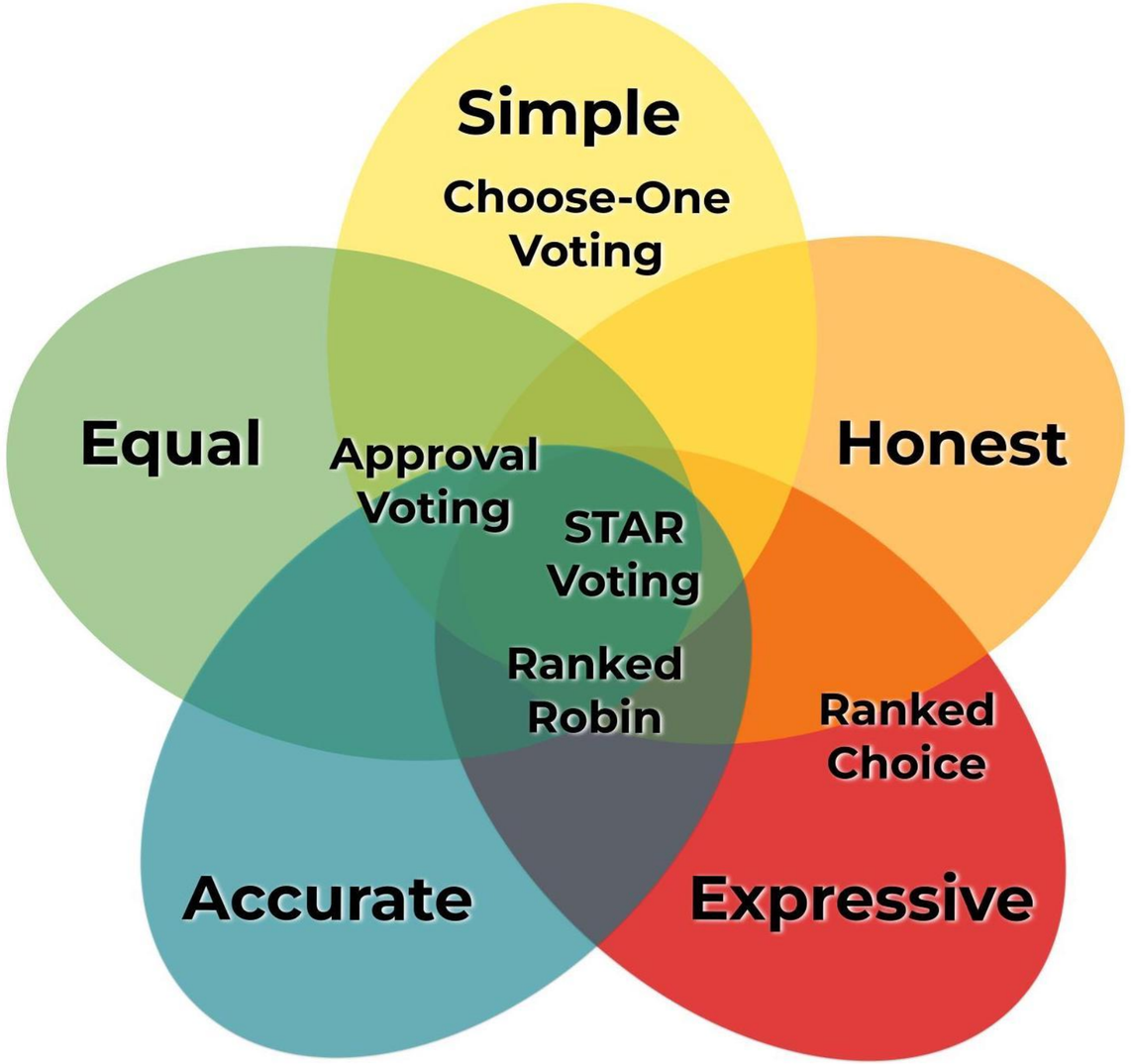
Majority Wins



Majority Loses

WHAT DO WE WANT IN A VOTING METHOD?

- **Simple:** Easy to vote, easy to tally, easy to audit. Transparent!
- **Honest:** Safe to vote your conscience. Incentivizes honest voting.
- **Expressive:** Voters are able to show their full opinion.
- **Accurate:** Winners reflect the will of the people as best as possible.
- **Equal:** Ensures an equally weighted vote for all. Eliminates vote-splitting. Doesn't give anyone an unfair advantage.



RANKED CHOICE DEAL BREAKERS

- **Wasted votes:** RCV wastes votes in multiple serious ways that are rare or non-existent in other methods.

- **Centralized Tabulation:** With RCV most rankings are not counted, leading to multiple serious logistical issues: centralized tabulation, delays, mistallies, and legal compliance and constitutionality issues.

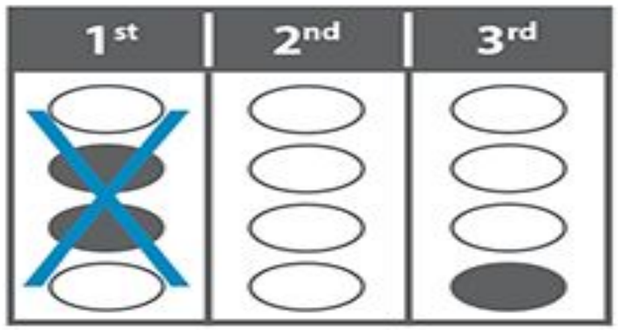
- **Inequality:** RCV doesn't treat all voters equally, doesn't adequately address vote-splitting, and doesn't ensure voters an equally powerful vote.

Ranked Choice - Voided Ballot Issues

In STAR Voting voters can score candidates as desired and their vote will be counted.

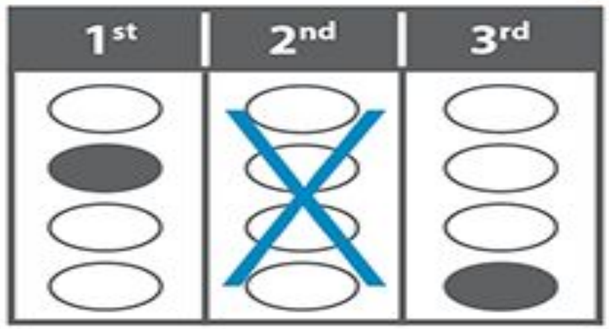
In RCV, the complex rules for voters lead to a high rate of "spoiled" or voided ballots.

RCV VOIDED BALLOT



No equal rankings allowed

RCV VOIDED BALLOT



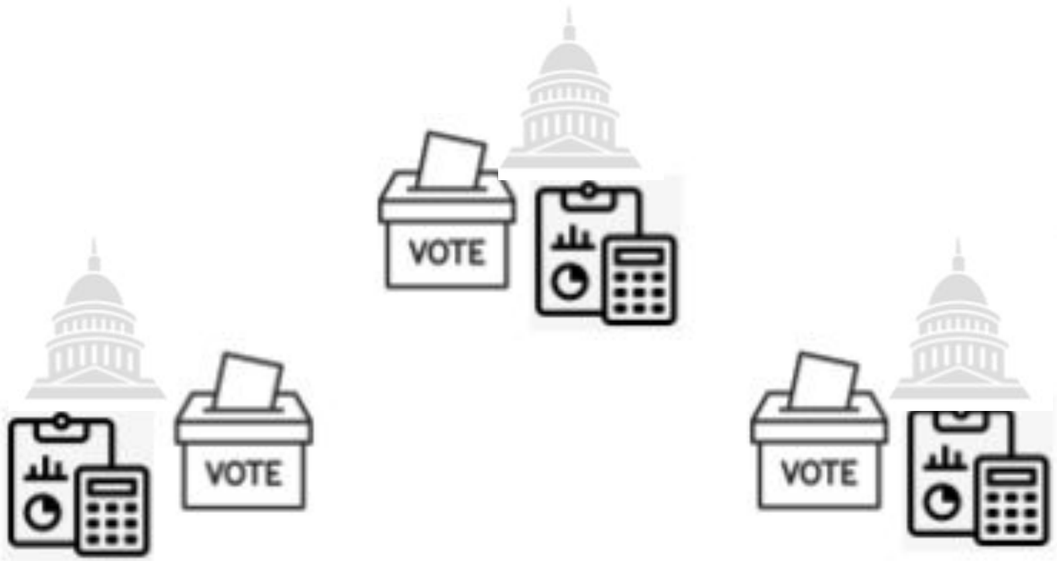
No skipped rankings allowed

Studies have unanimously found that low income voters, voters of color, older voters, and non-English speakers have their ballots voided at much higher rates.

Source: David Kimball. University of Missouri, St. Louis. Conference on Electoral System Reform. Stanford University. March 14-15, 2014. Voter Participation with RCV in the USA[41]

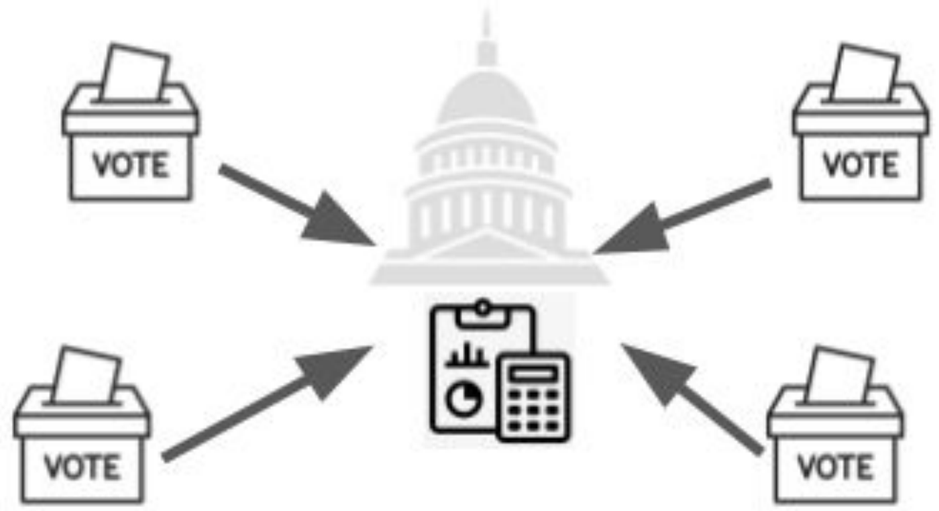
Implementation Logistics

With STAR Voting ballots are tallied locally



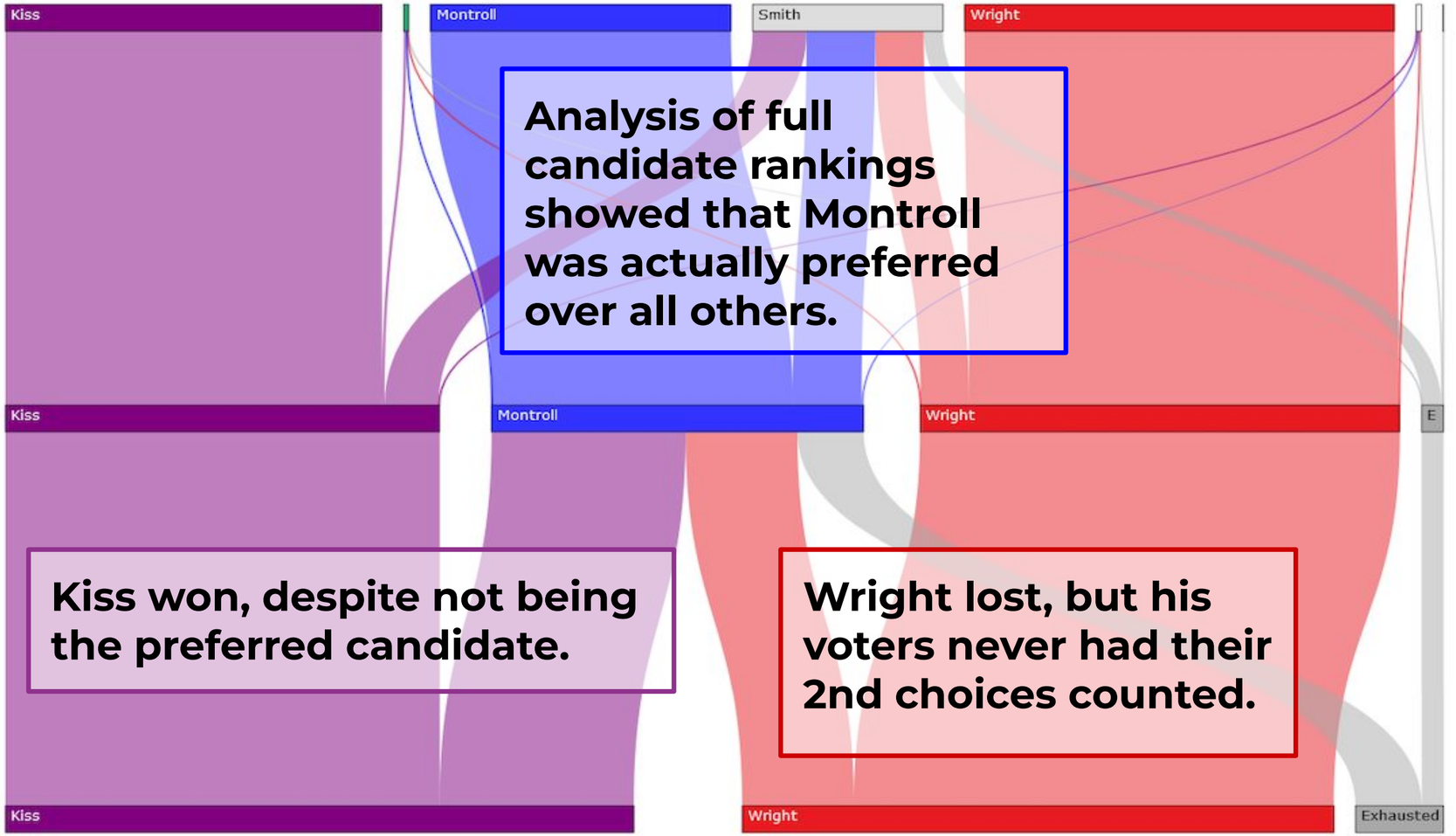
- All ballot data is counted
- Early returns can be fully tallied
- Precinct level results are available
- Audits are simple

RCV ballots require centralized tabulation



- Not all rankings are counted
- Early returns can't be fully tallied
- Precinct level results aren't available
- Audits are prohibitively complex

Inequality in RCV : Burlington



Analysis of full candidate rankings showed that Montroll was actually preferred over all others.

Kiss won, despite not being the preferred candidate.

Wright lost, but his voters never had their 2nd choices counted.

DETAIL OF EXHAUSTED BALLOTS

These ballots were not counted in the deciding round, despite being numerous enough to have flipped the election.

Exhausted

Kiss Wins

Montroll was also the majority preferred candidate.
If all ballot data had been counted he would have won.

REAL WORLD RCV FAILURES

Tabulation Failures (Jurisdictions which mistallied and reported incorrect election results):

- NYC, New York mayoral election. Democratic primary 2021: It was discovered that 135k test ballots had been added to the official reported results. Board of Elections did not catch the error.
- Alameda County, California. 2022 General Election: In all races, the steps in RCV were conducted out of order, causing the wrong candidate to be certified as the winner in one race. Board of Elections did not catch the error.

Results Failures (Jurisdictions where RCV failed to elect the candidate preferred over all others):

- Alaska House Special Election, Aug. 2022. The candidate preferred over all others lost. The two Republicans split the vote and the seat flipped Democratic for the first time.
- Burlington, Vermont, 2009. The candidate preferred over all others lost.
- Moab, Utah, 2021. The candidate preferred over all others lost the first seat, though the election was multi-winner.

Implementation and Legal Failures (7 jurisdictions passed RCV but have been unable to implement it):

- Vancouver, WA. Santa Clara County, CA. Memphis, TN. Sarasota, FL. Ferndale, MI. Austin, TX. Hoboken, NJ

Bans (10 states have now banned RCV):

- Tennessee, Florida, Idaho, Montana, South Dakota, Kentucky, Oklahoma, Alabama, Mississippi, and Louisiana. (A number of states have narrowly missed RCV bans that would have also banned alternative voting more broadly.)

Repeals (Jurisdictions that implemented and then repealed RCV):

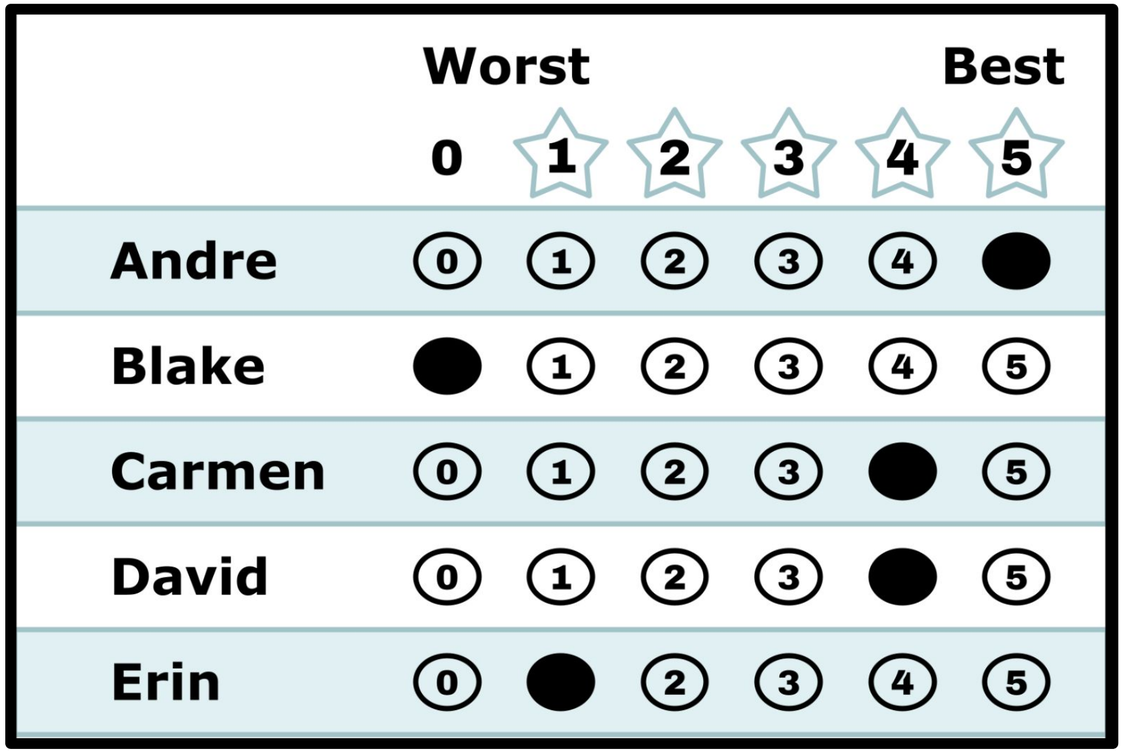
- Cary, NC. Aspen, CO. Ann Arbor, MI. Pierce County, WA. Sunnyvale, CA. Burlington, VT (later re-adopted). North Carolina. Hendersonville, NC. Eastpointe, MI. 10 cities in Utah.

INTRODUCING STAR VOTING

5 = Best. 0 = Worst.
Vote your conscience.

Instructions:

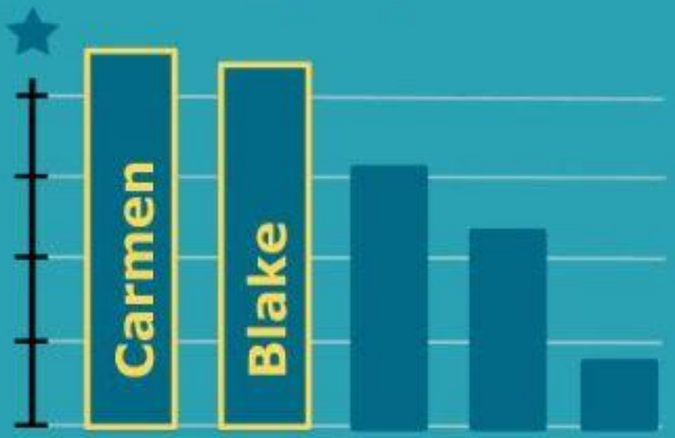
- Give your favorite candidate(s) five stars.
- Give your last choice(s) zero or leave blank.
- Equal scores are allowed.
- Score other candidates as desired.



Ballots are counted in two steps.

Scoring Round

The two highest-scoring candidates are finalists.



Carmen and Blake advance to the next round.

Automatic Runoff

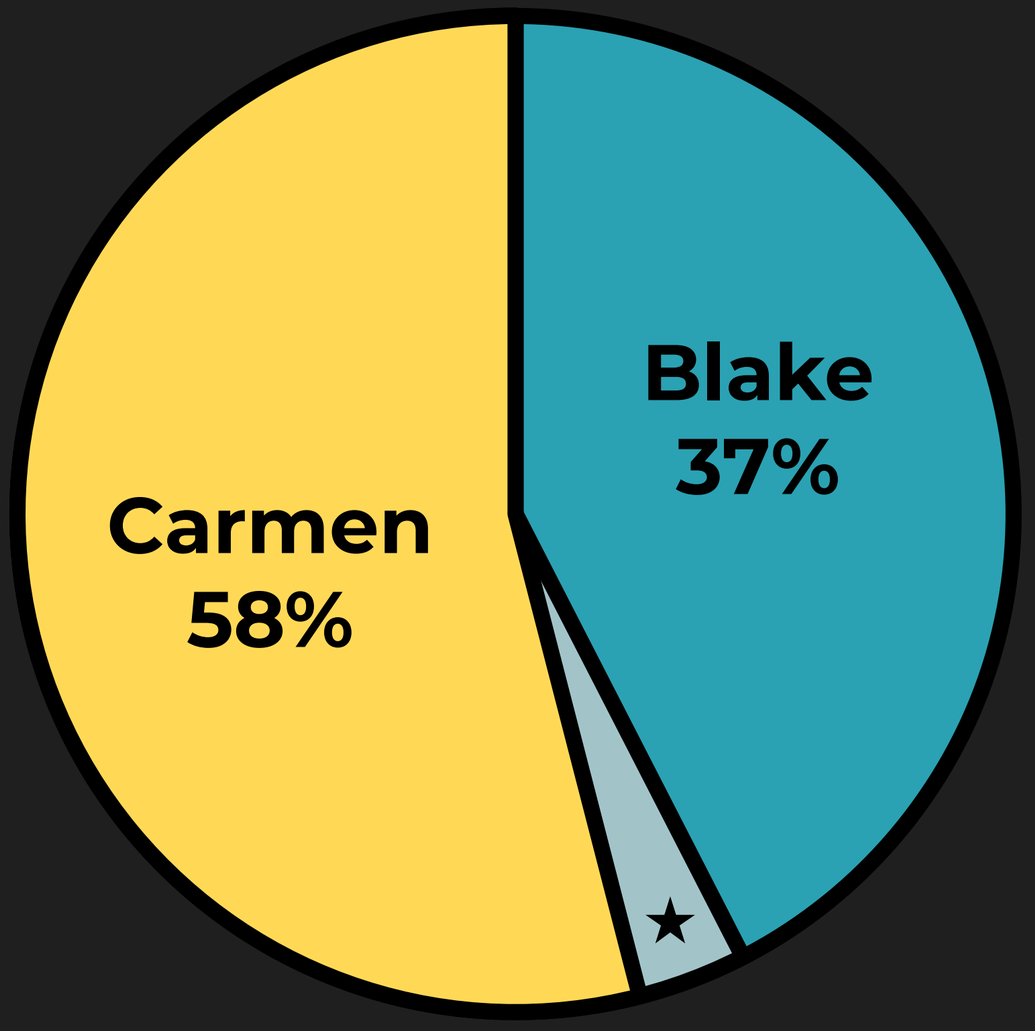
In the runoff, your ballot counts as one vote for the finalist you prefer.

Blake	0	●	2	3	4	5
Carmen	0	1	2	3	●	5

This vote goes to Carmen because she was scored higher than Blake.

Results

The finalist with the most votes wins!



★ Equal Preference Vote: both finalists scored equally

COST AND IMPLEMENTATION

a) STAR Voting is compatible with existing election infrastructure and election integrity laws. Adding STAR to your vote tabulators just requires a software update and recertification. Not new hardware.

b) Re-certification of hardware is not a barrier to implementation. It's just a process. Certification is estimated at around 50k.

c) Equal Vote Coalition has pledged to help ensure a comprehensive, inclusive voter education campaign, including offering staff hours, resources, and technical support.

d) The Equal Vote Coalition 501c3 has a "STAR Voting Implementation Fund" to help pay for certification and early implementation costs.

Single-Winner Voting Method Scorecard

	Choose One (Plurality)	Choose One + Top Two Runoff	Ranked Choice (IRV)	STAR
Spoiler Effect / Vote Splitting	YES	In primary but not in general election	YES - With 3 or more viable candidates	NO
Wasted Votes	Not voting for a frontrunner is a wasted vote	Not voting for a frontrunner is a wasted vote	Relevant rankings can be ignored and voided ballots are common	NO
Ballots tabulated locally?	Local tally	Local tally	Centralized Tally	Local tally
Tabulation Complexity	Add up votes	Add up votes	Multiple elimination rounds and vote transfers	Add up stars, then add up votes
Gives an unfair advantage to polarizing or non-polarizing candidates?	Strongly favors polarizing candidates	Favors polarizing candidates	Favors polarizing candidates	NO
Voters incentivised to exaggerate support for lesser-evil candidates?	Strong lesser-evil voting incentive	Minimal lesser-evil voting incentive	Moderate lesser-evil voting incentive	Voters should show honest preference order
Most Effective Strategy * (PVSI)	Favorite Betrayal 14%	Favorite Betrayal 1%	Favorite Betrayal 3%	Honest Inflation 2%
Accuracy * (Voter Satisfaction Efficiency)	70% – 87%	89% – 91%	92%	98% – 99%

EQUAL.VOTE

* Statistics from the Constitutional Political Economy

Key: Worst to Best

Which Animal Makes The Best Pet?

Try

STAR VOTING

SCORE - THEN - AUTOMATIC - RUNOFF

Scan the QR code to vote!

equal.vote/pet

Q & A

How does STAR Voting work?

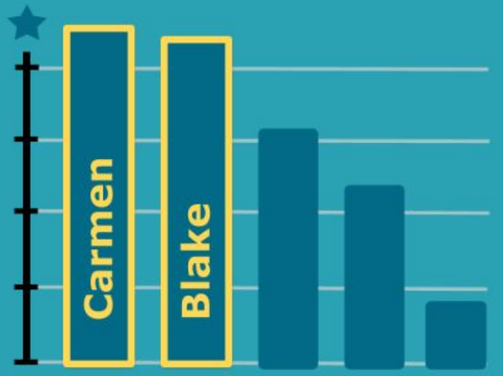
STAR VOTING
SCORE - THEN - AUTOMATIC - RUNOFF

Instructions:
Give your favorite(s) 5 stars, your last choice(s) 0 stars, and vote your conscience.

	Worst 0	1	2	3	4	Best 5
Andre	○	○	○	○	○	●
Blake	●	○	○	○	○	○
Carmen	○	○	○	○	●	○
David	○	○	○	○	●	○
Erin	○	●	○	○	○	○

Scoring Round

The two highest-scoring candidates are finalists.



Carmen and Blake advance to the next round.

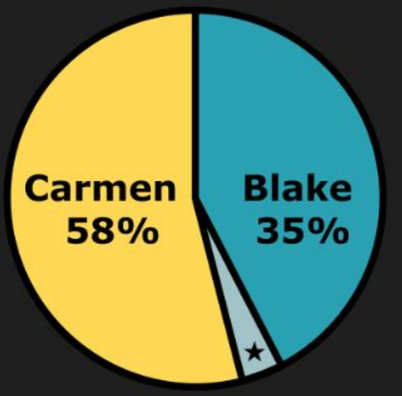
Automatic Runoff

In the runoff, your ballot counts as one vote for the finalist you prefer.

Blake	●	○	○	○	○	○
Carmen	○	○	○	○	●	○

This vote goes to Carmen because she was scored higher than Blake.

Results



The finalist with the most votes wins!

★ No Preference Vote: both finalists scored equally

Add up the stars, then add up the votes!

What is an "Equal Preference Vote"?

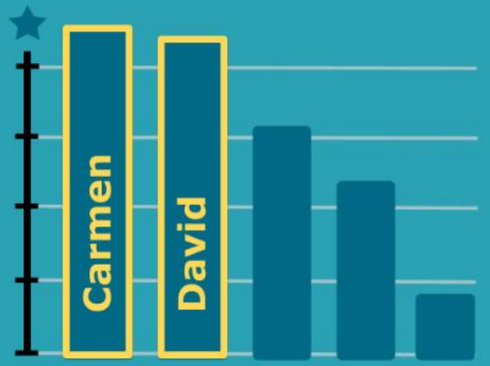
STAR VOTING
SCORE - THEN - AUTOMATIC - RUNOFF

Instructions:
Give your favorite(s) 5 stars, your last choice(s) 0 stars, and vote your conscience.

	Worst 0	1	2	3	4	Best 5
Andre	0	1	2	3	4	●
Blake	●	1	2	3	4	5
Carmen	0	1	2	3	●	5
David	0	1	2	3	●	5
Erin	0	●	2	3	4	5

Scoring Round

The two highest-scoring candidates are finalists.



Carmen and David advance to the next round.

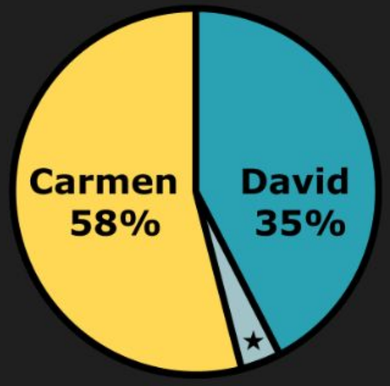
Automatic Runoff

In the runoff, your ballot counts as one vote for the finalist you prefer, if you had a preference.

	0	1	2	3		5
Carmen	0	1	2	3	●	5
David	0	1	2	3	●	5

If you scored the finalists the equally, your ballot is counted as an "Equal Preference Vote" in the automatic runoff.

Results



The finalist with the most votes wins!

★ Equal Preference Vote: both finalists scored equally

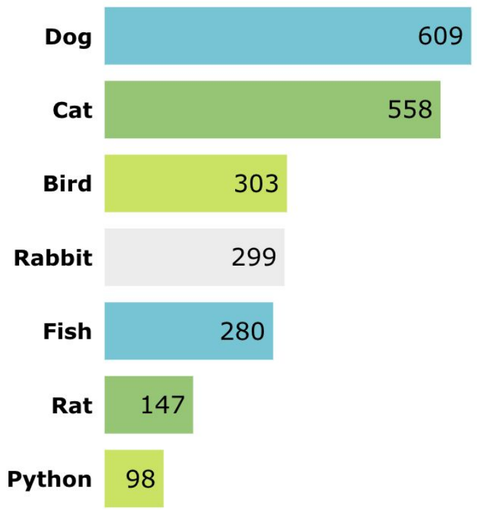
Ballot info is counted as the voter intended

STAR RESULTS

STAR Voting is tallied in 2 steps:
1.) Add up the stars. 2.) Add up the votes.

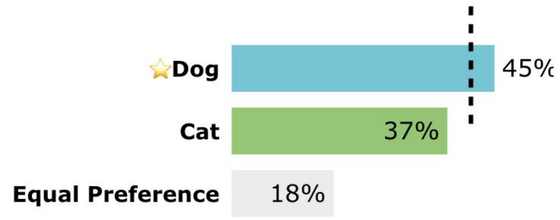
Scoring Round

Add the stars from all the ballots.
The two highest scoring candidates are the finalists.



Automatic Runoff Round

Each vote goes to the voter's preferred finalist.
Finalist with most votes wins.



⭐ **Dog Wins!** ⭐

148 voters

THE ORIGINS OF STAR VOTING

In 2014, Equal Vote hosted a conference on electoral reform at the University of Oregon.

Advocates for the leading voting methods came together to present and discuss the options, but couldn't reach consesnsus. None of the proposals on the table could deliver on everyone's goals, and each proposal had its drawbacks.

This conversation sparked an idea. Could a hybrid proposal combine the best elements of previous proposals to deliver better results while addressing valid concerns with the older methods?

Score Voting

+

Instant Runoff (aka Ranked Choice)

=

STAR VOTING

SCORE - THEN - AUTOMATIC - RUNOFF

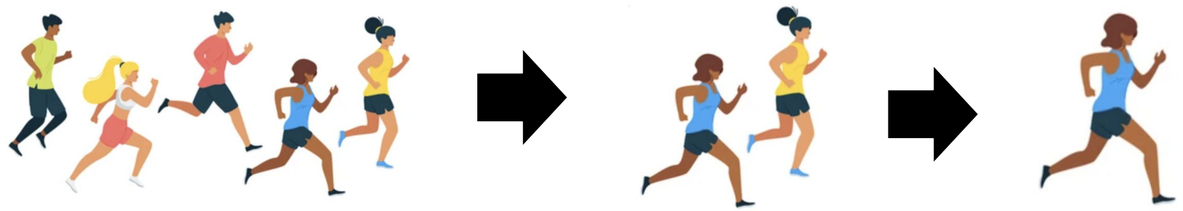
EMPOWERING VOTER VOICE

The 5 Star Ballot

	0	1	2	3	4	5
Andre	0	1	2	3	4	●
Blake	0	●	2	3	4	5
Carmen	0	1	2	3	●	5
David	0	1	2	3	●	5
Ella	●	1	2	3	4	5

- Allows voters to easily show both preference order, and level of support.
- Best for cognitive load. Getting great data while reducing voter errors and confusion.
- Votes are tallied with simple addition.

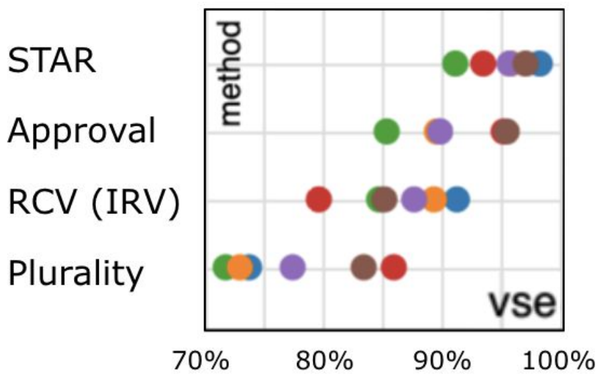
The Top-2 Runoff



- Honesty is the best policy: Give 5 stars to your favorite(s), and show your honest preference order between the other candidates.
- Your vote *automatically* goes to the finalist you prefer.
- If your favorite can’t win, your vote still makes a difference.
- No matter what scores you gave to the finalists, your one full vote goes to the finalist you prefer.

FAIR - ACCURATE - EQUAL

- STAR tops the charts in every study and statistical analysis of voting method accuracy.
- The star ballot collects the best quality data possible on voter opinion, and then it uses all that data.
- No ballot data is wasted or ignored. Every ballot is counted in both rounds.
- STAR voting eliminates vote-splitting and the spoiler effect and guarantees that the voting method passes the highest bar for One-Person-One-Vote.



VOTING THEORY FACTS:

- The invention of STAR Voting was predicted in 2000 when studies on "Bayesian Regret" showed that Score voting when combined with a top two runoff was the best at electing the candidate who best represents the will of the people.
- The legal definition of one-person-on-vote requires ensuring an equally weighted vote when possible, which can only be done by eliminating vote-splitting.

SPRINGER LINK

Constitutional Political Economy (2023) 34:310–334
https://doi.org/10.1007/s10602-022-09389-3

ORIGINAL PAPER

STAR Voting, equality of voice, and voter satisfaction: considerations for voting method reform

Sara Wolk[1] · Jameson Quinn[2] · Marcus Ogren[3]

Accepted: 24 December 2022 / Published online: 20 March 2023

"The Later No Harm (LNH) criterion is effectively the opposite of Favorite Betrayal. Saying nothing about whether it's safe to vote for one's favorite, LNH specifies that supporting other candidates in addition to a voter's favorite cannot hurt their first choice. This allows candidates to encourage supporters to rank others at no risk to themselves.

Both criteria are clearly desirable, but no deterministic voting method proposed to date has been able to satisfy both for elections with more than two candidates. We posit that rather than passing one but then failing the other criterion badly, voting methods should instead seek to maximize both. We believe that violations of LNH and FB, and their impacts on strategic voting incentives, should be evaluated statistically rather than with an axiomatic approach alone.

As we will show, STAR Voting incentivizes both honest and expressive voting by counting all ballot data given. The scoring round incentivizes voters to give their favorite(s) five stars. The runoff incentives voters to also give intermediate scores because showing honest preference order ensures their full vote will go to the finalist they prefer in the automatic runoff.

Compare this with Instant Runoff Voting, which can actually incentivize Favorite Betrayal because, in order to pass Later No Harm, it ignores down-ballot voter preferences which could have been relevant. Despite the widespread claim that IRV eliminates the Spoiler Effect, Emily Dempsey (2018) demonstrates that in order to pass Later No Harm, a voting method must by definition fail to eliminate the Spoiler Effect and vote-splitting. For these reasons, we believe that the adherence to Later No Harm as a desirable pass/fail criterion is problematic.

In IRV, some voters whose favorites are eliminated will have their next choice counted, but voters whose favorites are eliminated in the final round will not. This biases elections against voters who prefer strong underdog candidates with broad support.

Counting the full ballot for some voters while ignoring relevant ballot data for others (as Later No Harm requires) gives voters a false sense of agency, may erode trust in the system and in voting reform in general, and is out of keeping with the spirit of one person, one vote.

Elections spoiled due to vote-splitting not only fail to elect the right winner, they also bias outcomes in predictable ways. "The Spoiler Effect occurs when a third candidate entering a race splits votes with a similar candidate who would otherwise win, thus causing a candidate less-preferred by the electorate to win instead." Dempsey (2018)

The center-squeeze Spoiler Effect in particular is pervasive in Plurality but is exhibited by IRV as well. When it happens, it fuels polarization and entrenches two party domination by preventing candidates in the middle of the field from winning."

"In 1964, Wesberry v. Sanders, (Black, 1964) The U.S. Supreme Court declared that equality of voting—one person, one vote—means that "the weight and worth of the citizens' votes as nearly as is practicable must be the same." Passing the Equality Criterion ensures that it's possible for voters who disagree to cast equally weighted and opposite votes, no matter how many candidates are on their side. Approval, Score, Smith/Minimax, and STAR Voting all pass this basic and 'practicable' criteria; Plurality and Instant Runoff Voting do not."

COMBATTING STRATEGIC VOTING

Ensuring that it's safe to support your favorite

- In our current system, and Ranked Choice, it's not necessarily safe to vote for your favorite.
- Voters don't want to waste their vote on a candidate who can't win, so voting for the "lesser of two evils" is common.
- In STAR Voting you should always give your honest favorite 5 stars.

Incentivising voters to show their preference order

- In STAR Voting the runoff creates strong incentives for voters to show their preference order between the candidates.
- Showing your preference order between the front-runnners ensures that your voice makes a difference in the runoff.

VOTING THEORY FACTS:

- No voting method can eliminate strategic incentives in every scenario.
- No voting method can pass every desireable criteria.
- Many criteria are mutually exclusive, including "Favorite Betrayal" and "Later No Harm."
- The goal is to ensure good incentives and good outcomes in practice.

STAR IS NATIONALLY VIABLE

STAR Voting is constitutional all over the country, and beyond.

STAR Voting naturally complies with existing election laws, including one-person, one-vote, majority requirements, "most votes wins" clauses, local tabulation clauses, auditing requirements, and many more.

STAR Voting Endorsements

EQUAL.VOTE

OREGON LEAGUE of CONSERVATION VOTERS OLCV

REVOLUTION PORTLAND

TECHNOLOGY ASSOCIATION OF OREGON

Washington Berniecrats Coalition

Utah Approves.

PO

OREGON PROGRESSIVE PARTY

MULTNOMAH DEMOCRATS EMPOWERING PEOPLE

Alliance for Democracy

KING NEIGHBORHOOD ASSOCIATION

AAUW Eugene-Lane (OR) Branch

MOVEMENT FOR A PEOPLE'S PARTY NEW JERSEY

communitecture ARCHITECTURE | PLANNING | DESIGN gather round

foster-powell neighborhood association

MUSICIANS Union Local 99

EUGENE-SPRINGFIELD ESSN SOLIDARITY NETWORK

INDEPENDENT PARTY OF OREGON

WELLBEING ECONOMY ALLIANCE CALIFORNIA

ProRep COALITION

represent Us albany

DEMOCRATIC PARTY of OREGON Elections Integrity Caucus

The City Repair Project

PORTLAND NEIGHBORS WELCOME

AMERICANS FOR REPRESENTATION

DEMOCRATIC SOCIALISTS OF AMERICA EUGENE - SPRINGFIELD

California APPROVES

UNSPLIT THE VOTE

WHITEAKER COMMUNITY COUNCIL

UTAH CENTER FOR ELECTORAL REFORM

represent Us OREGON

SWARM AGE

FWD TX

Comparing STAR Voting and RCV

(Ranked Choice Voting)

COMPARING STAR AND RANKED CHOICE

STAR VOTING
SCORE - THEN - AUTOMATIC - RUNOFF

- Give your favorite five stars.
- Give your last choice zero or leave blank.
- Equal scores are allowed.
- Score other candidates as desired.

	Worst 0	1	2	3	4	Best 5
Andre	0	1	2	3	4	●
Blake	●	1	2	3	4	5
Carmen	0	1	2	3	●	5
David	0	1	2	3	●	5
Erin	0	●	2	3	4	5

The two highest scoring candidates are finalists. Your full vote goes to the finalist you prefer. The finalist with the most votes wins.

Instructions ⟺

Tabulation ⟺

Ranked Choice Voting

- Rank candidates in order of preference.
- Equal ranks are not allowed.
- Candidates left blank are ranked last.

	1st	2nd	3rd	4th	5th
Andre	●	2	3	4	5
Blake	1	2	3	4	●
Carmen	1	2	3	●	5
David	1	●	3	4	5
Erin	1	2	●	4	5

Votes are counted in rounds. If a candidate has a majority of remaining votes in a round, they are elected; otherwise, the candidate with the fewest votes is eliminated. In each round, your vote goes to the remaining candidate you ranked highest. If your vote is unable to transfer, it is discarded.

WASTED VOTES - Ballot Limitations

Ranked Choice Voting
aka Instant Runoff Voting

Rank candidates in order of preference.
You can't give the same ranking twice.

Rank Candidates:	1st	2nd	3rd	4th	5th
Abby	1	2	3	4	5
Ben	1	2	3	4	●
Carmen	1	2	●	4	5
DeAndre	1	●	3	4	5
Eric	1	2	3	●	5
Francisco	1	2	3	4	5
Graham	●	2	3	4	5
Hector	1	2	3	4	5
Irma	1	2	3	4	5

- RCV ballots only allow voters to rank a limited number of candidates.
- Limiting the number of ranks in RCV helps prevent spoiled ballots, but increases the number of exhausted ballots in races with large fields of candidates.
- With STAR, voters can score as many or as few candidates as they want because equal scores are allowed.

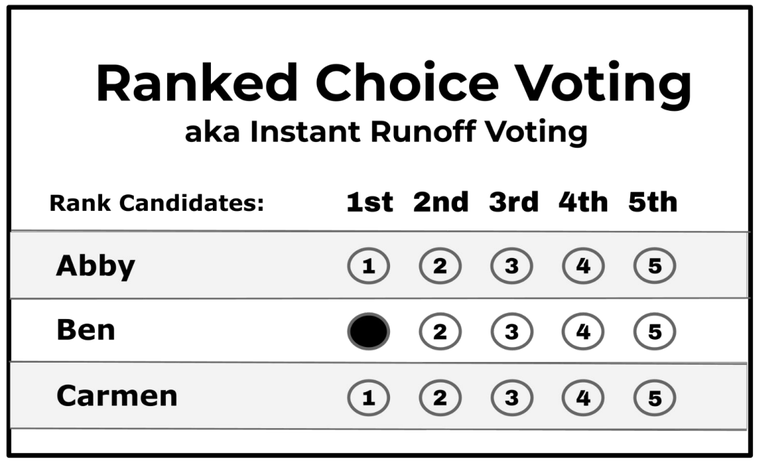
STAR VOTING
SCORE - THEN - AUTOMATIC - RUNOFF

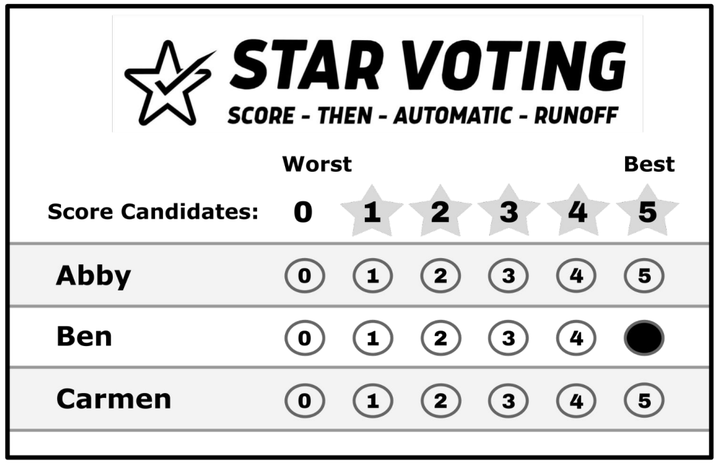
- Give your favorite(s) five stars.
- Give your last choice(s) zero stars.
- Show preference order and level of support.
- Equal scores indicate no preference.
- Those left blank receive zero stars.

	Worst					Best
Score Candidates:	0	1	2	3	4	5
Andre	0	1	2	3	●	5
Blake	●	1	2	3	4	5
Carmen	0	1	2	3	4	●
David	0	1	2	3	4	●
Ella	0	●	2	3	4	5
Fernando	0	1	2	●	4	5
Gabe	0	1	2	3	4	●
Helena	0	1	2	3	●	5
Ira	●	1	2	3	4	5

BULLET VOTING

In both Ranked Choice and STAR Voting some voters may "bullet vote" and **only vote for their favorite**. In both systems, if the voter did have a more nuanced opinion this is **not effective** and their vote is **less likely to make a difference**.

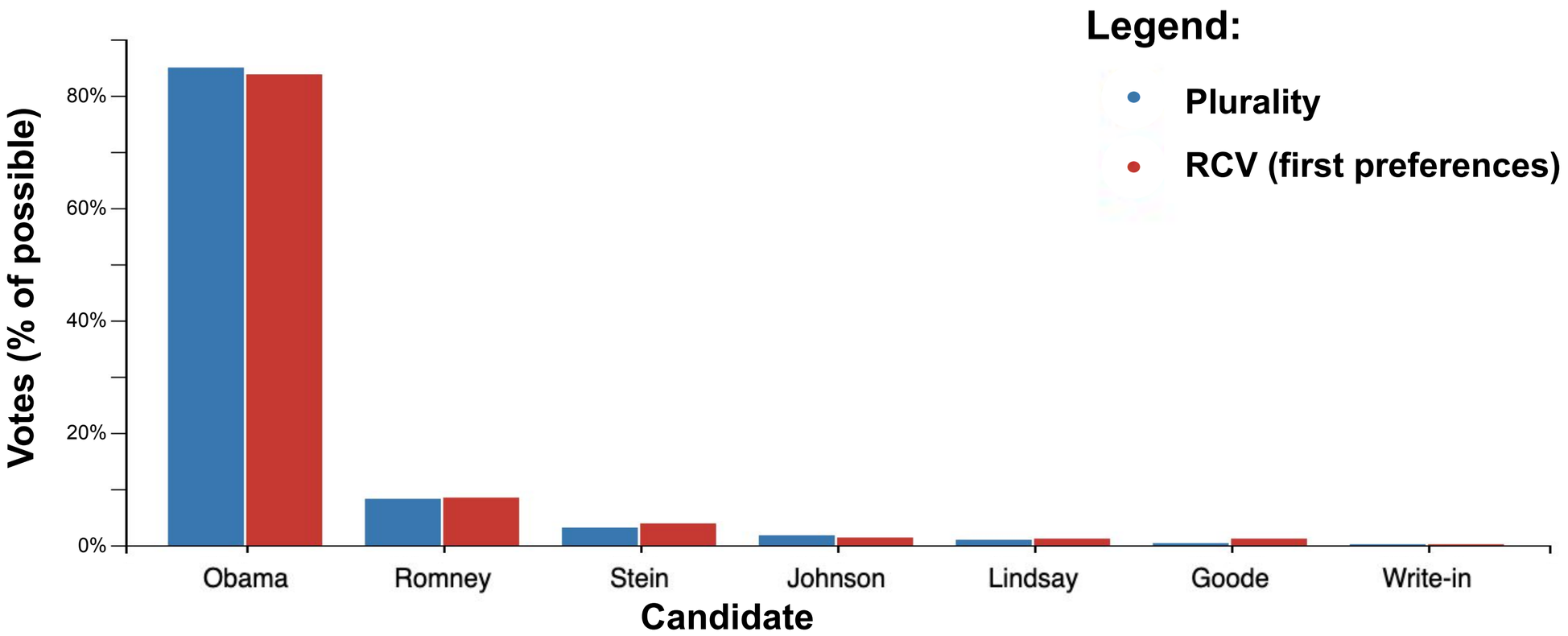




Who are Bullet Voters?

- Voters who have a polarized opinion and only like one candidate.
- Voters who only have one candidate on their side.
- Lazy or rushed voters who don't take the time to vote expressively.
- Voters who strategically decide not to show support for other candidates, even though this is not a good strategy in either STAR or RCV.

MEASURING PUBLIC OPINION

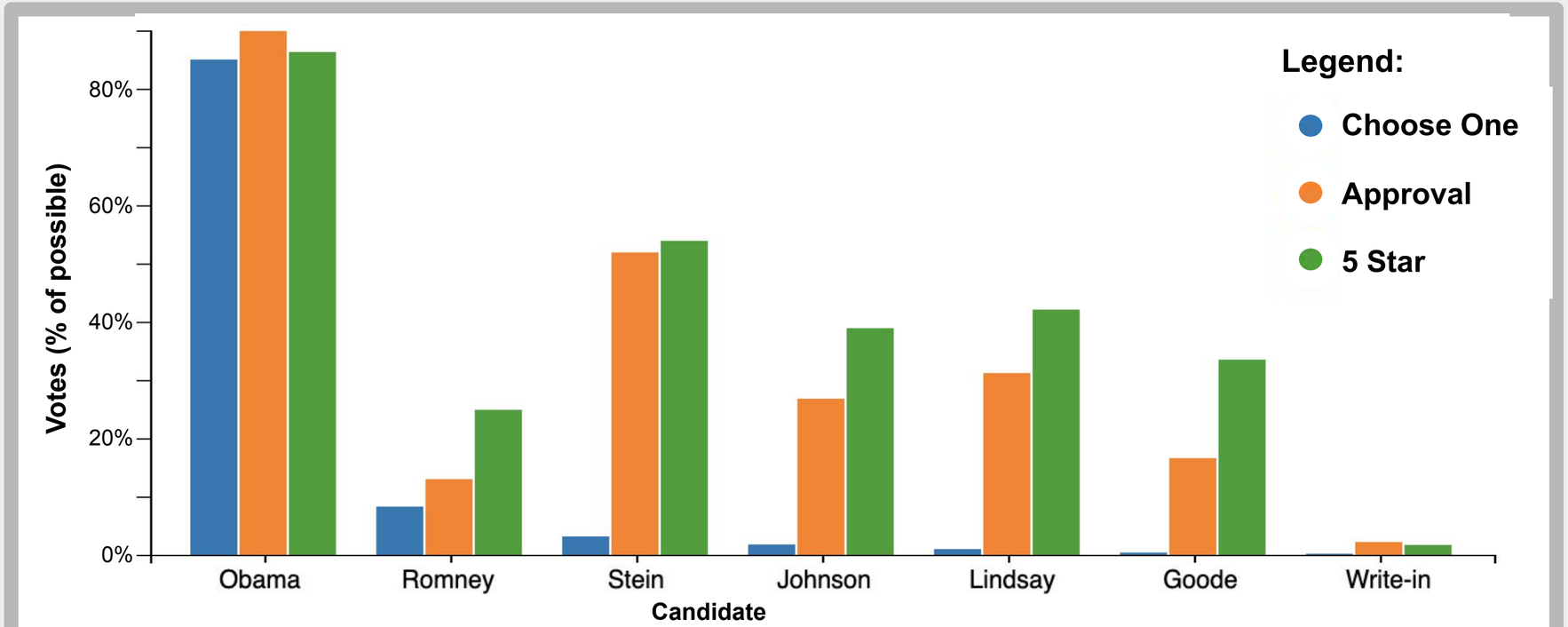


If there's a clear winner, RCV only counts voters 1st choices, so Plurality and RCV results looked almost identical and barely showed any support for the losing candidates.

https://electowiki.org/wiki/2012_Occupy_Wall_Street_polls Note: Political leanings of participants are not expected to be representative of the general population.

MEASURING PUBLIC OPINION

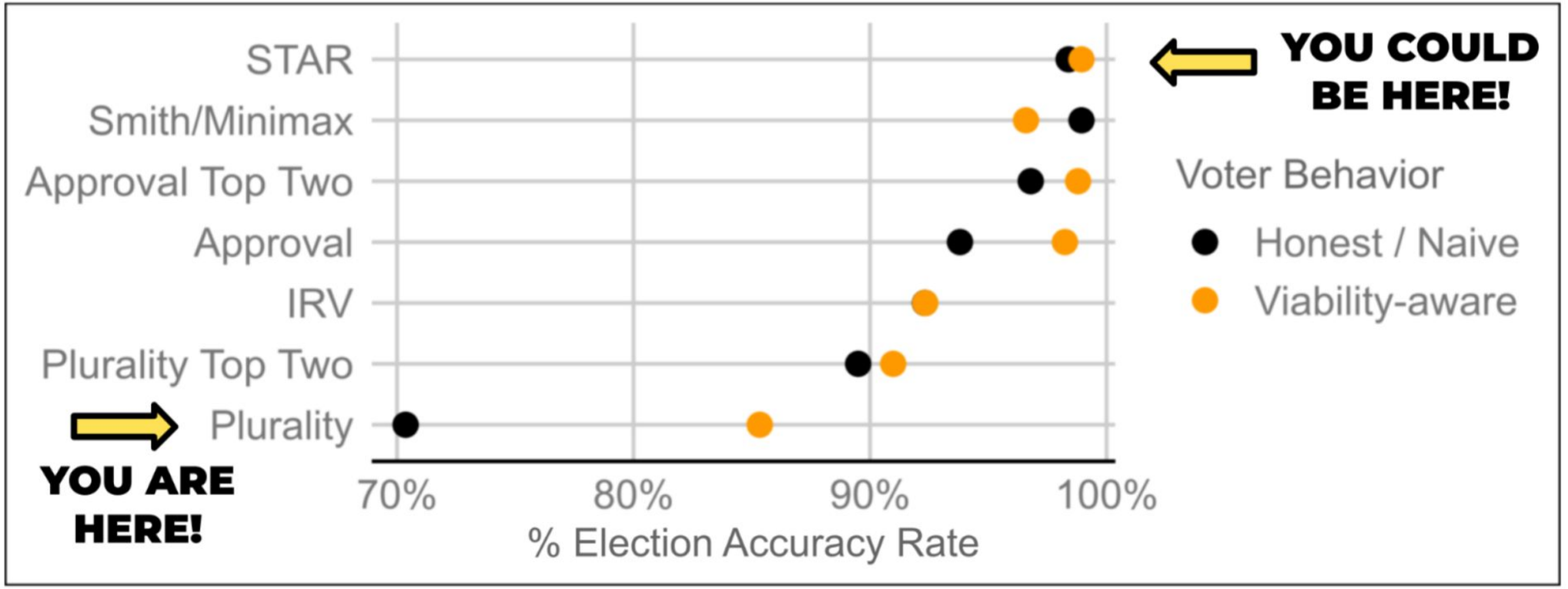
A 2012 exit poll in NYC looked at **voter behavior** under alternative voting methods; Plurality was compared to Approval, 5 Star, and Ranked Choice.



Obama won by a landslide with all methods, but 5 Star and Approval Voting results also showed support for the 3rd party candidates.

Election Accuracy by Voting Method

"Voter Satisfaction Efficiency" uses realistic simulated elections to predict how often a voting method will elect the most representative winner. This chart looks at each method's accuracy depending on voter behavior.



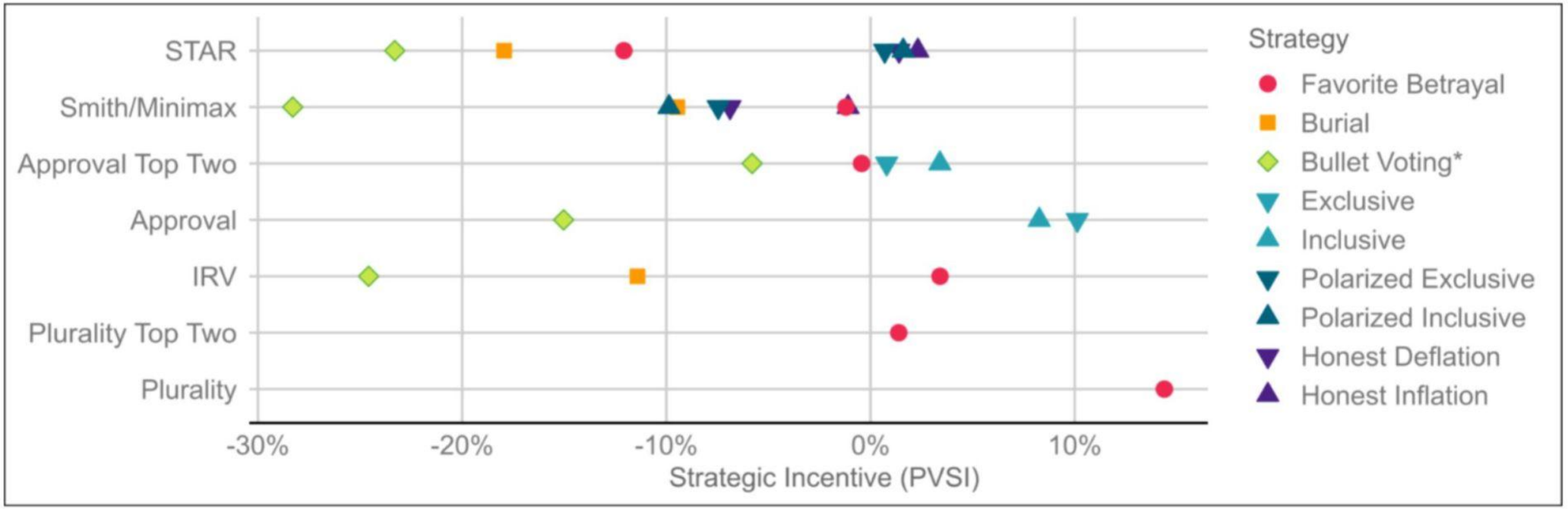
EQUAL.VOTE

* Chart and data from peer reviewed article:
"STAR Voting, Equality of Voice, and Voter Satisfaction",
Constitutional Political Economy, March 2023.

Honesty is the best policy with STAR Voting

With STAR Voting, dishonest strategies are strongly disincentivised, including lesser-evil voting (red), burying a competitor in your rankings (orange), and bullet voting (green).

With Choose One Voting (Plurality) and Ranked Choice Voting (IRV), voting “lesser evil” is incentivized, and voting for your honest favorite can backfire.

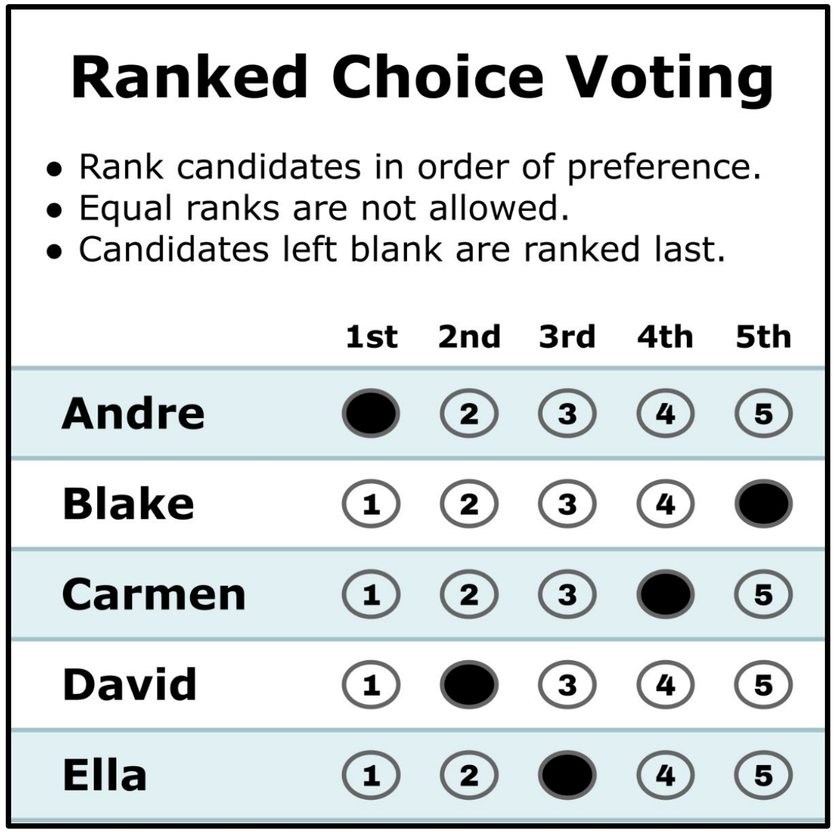


EQUAL.VOTE

* Chart and data from “STAR Voting, Equality of Voice, and Voter Satisfaction”, Constitutional Political Economy, March 2023.

More Info on Ranked Choice Voting (RCV)

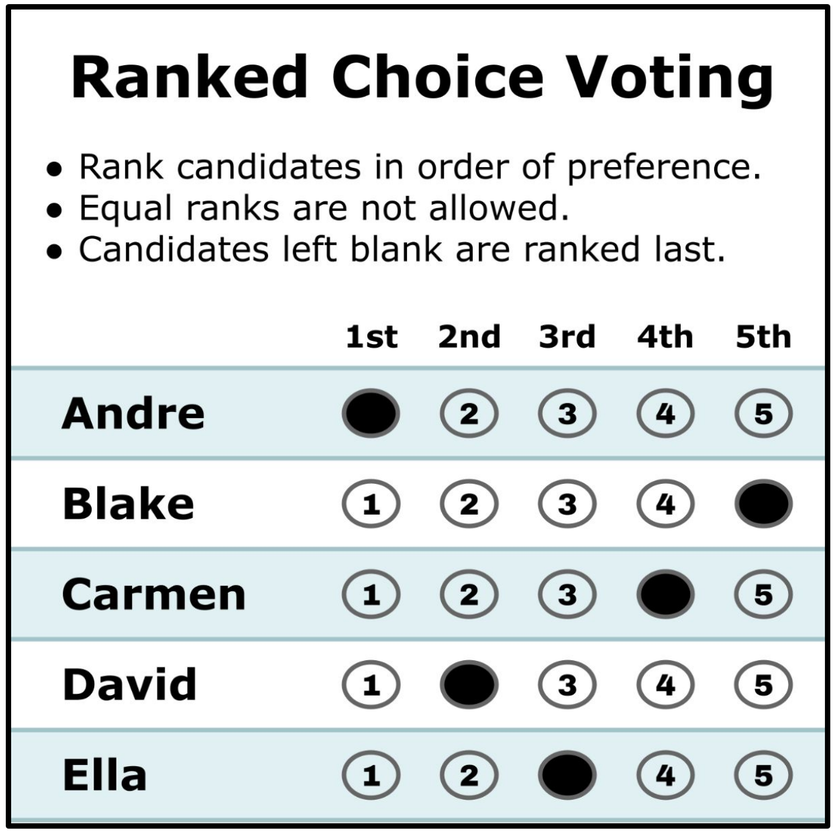
WHAT IS RANKED CHOICE VOTING?



RCV Tabulation:

- 1st choice votes are counted and if a candidate has a majority they are elected.
- otherwise, the candidate with the fewest 1st choices is eliminated and votes transfer, if possible.
- In each round, your vote goes to the remaining candidate you ranked highest.
- If your vote is unable to transfer, it is discarded.

RCV TAKEAWAYS



- Voters rank candidates, but **most rankings are not counted.** It depends on the order of elimination.
- Selectively **ignoring ballot data can skew election results**. Those whose favorite is eliminated, but whose next choice isn't counted are **unfairly disadvantaged**.
- **The candidate preferred over all others can lose**. Elections with three or more competitive candidates are the most likely to fail.

RCV Misconceptions and False Claims

Most people incorrectly assume, or were incorrectly told that:

- If your favorite can't win, your next choice will be counted.
- It's safe to vote your conscience.
- Your vote won't be wasted.
- RCV is as easy as 123.
- Winners will have a true majority.
- RCV is non-polarizing.
- RCV breaks two party domination.

These claims are all false or oversold.

Ranked Choice Voting

- Rank candidates in order of preference.
- Equal ranks are not allowed.
- Candidates left blank are ranked last.

	1st	2nd	3rd	4th	5th	6th
Andre	●	②	③	④	⑤	⑥
Blake	①	②	③	④	⑤	●
Carmen	①	●	③	④	⑤	⑥
David	①	②	●	④	⑤	⑥
Erin	①	②	③	④	●	⑥
Felicia	①	②	③	●	⑤	⑥

Votes are tallied in rounds. In each round, your vote goes to the highest-ranked remaining candidate on your ballot, if any; otherwise, your vote is discarded. If a candidate has a majority of remaining votes in a round, they are elected; otherwise, the candidate with the fewest remaining votes is eliminated.

REAL WORLD RCV FAILURES

Tabulation Failures (Jurisdictions which mistallied and reported incorrect election results):

- NYC, New York mayoral election. Democratic primary 2021: It was discovered that 135k test ballots had been added to the official reported results. Board of Elections did not catch the error.
- Alameda County, California. 2022 General Election: In all races, the steps in RCV were conducted out of order, causing the wrong candidate to be certified as the winner in one race. Board of Elections did not catch the error.

Results Failures (Jurisdictions where RCV failed to elect the candidate preferred over all others):

- Alaska House Special Election, Aug. 2022. The candidate preferred over all others lost. The two Republicans split the vote and the seat flipped Democratic for the first time.
- Burlington, Vermont, 2009. The candidate preferred over all others lost.
- Moab, Utah, 2021. The candidate preferred over all others lost the first seat, though the election was multi-winner.

Implementation and Legal Failures (Jurisdictions that passed RCV but have been unable to implement it.):

- Vancouver, WA. Santa Clara County, CA. Memphis, TN. Sarasota, FL. Ferndale, MI. Austin, TX. Hoboken, NJ

Bans (10 states have now banned RCV):

- Tennessee, Florida, Idaho, Montana, South Dakota, Kentucky, Oklahoma, Alabama, Mississippi, and Louisiana. (A number of states have narrowly missed RCV bans that would have also banned alternative voting more broadly.)

Repeals (Jurisdictions that implemented and then repealed RCV):

- Cary, NC. Aspen, CO. Ann Arbor, MI. Pierce County, WA. Sunnyvale, CA. Burlington, VT (later re-adopted). North Carolina. Hendersonville, NC. Eastpointe, MI. 10 cities in Utah.

San Francisco Chronicle

BAY AREA

Alameda County admits tallying error in ranked-choice voting, flips one result and raises big questions

Jill Tucker, Jordan Parker, J.D. Morris, Nami Sumida

Dec. 28, 2022 | Updated: Jan. 3, 2023 11:36 a.m.

More than 50 days after the November election and days before winners take office, Alameda County election officials announced that a programming error led to a miscount across all ranked-choice contests, including a race in which an Oakland school board candidate was wrongly declared the winner.

The revelation came well after the county certified the results and raised questions not only about what happens next, but whether the mistake could further erode faith in fair elections.

...

San Francisco political consultant Jim Ross said he had never seen anything like the vote-count reversal in his three decades of political work in numerous states.

More than 50 days after the November election and days before winners take office, Alameda County election officials announced that a programming error led to a miscount across all ranked-choice contests, including a race in which an Oakland school board candidate was wrongly declared the winner.

The revelation came well after the county certified the results and raised questions not only about what happens next, but whether the mistake could further erode faith in fair elections.

"As somebody who does politics for a living, I'm kind of shocked, outraged and just dismayed about it all," he said. "You count on the registrar of voters to conduct the election in a way that's fair and competent.... It really feeds into the distrust that so many people have in our electoral system when this sort of thing happens."

...

FairVote, an election reform group, alerted Alameda County to the problem with November's vote, and officials subsequently confirmed the miscount.

...

The Alameda County registrar explained that if a voter didn't select a candidate as first choice, then the second choice should have been counted as the first choice in the first round. The same would occur in subsequent rounds moving lower choices up into the empty slot. Instead, the erroneous algorithm didn't count any vote in a round if a space was blank.

...

More than 200 ballots were considered suspended and not counted correctly in the Oakland District Four school director race. A majority of these suspended votes, 115, were for Hutchinson.

Without the suspended votes in the first-round results, the ranked-choice voting algorithm incorrectly determined that Hutchinson had the fewest votes and eliminated him in the first round. But with the suspended votes, Hutchinson's vote tally grows to 8,227, making him the second-highest vote-getter in the first round after Resnick. Hutchinson then won by a few hundred votes in the second round.

The New York Times

New York Mayor's Race in Chaos After Elections Board Counts 135,000 Test Ballots

The extraordinary sequence of events threw the closely watched Democratic primary contest into a new period of uncertainty and seeded further confusion about the outcome.

A new vote tally released by the Board of Elections suggested that Eric Adams's lead in the mayoral primary had winnowed; the results were later taken down. James Estrin/The New York Times

By Katie Glueck

Published June 29, 2021 Updated Nov. 4, 2021

The New York City mayor's race plunged into chaos on Tuesday night when the city Board of Elections released a new tally of votes in the Democratic mayoral primary, and then removed the tabulations from its website after citing a "discrepancy."

> Then, around 10:30 p.m., the board finally released a statement, explaining that it had failed to remove sample ballot images used to test its ranked-choice voting software. When the board ran the program, it counted "both test and election night results, producing approximately 135,000 additional records," the statement said. The ranked-choice numbers, it said, would be tabulated again.
>
> The extraordinary sequence of events seeded further confusion about the outcome, and threw the closely watched contest into a new period of uncertainty at a consequential moment for the city.

...

The results released earlier in the day had suggested that the race between Eric Adams and his two closest rivals had tightened significantly.

But just a few hours after releasing the preliminary results, the elections board issued a cryptic tweet revealing a "discrepancy" in the report, saying that it was working with its "technical staff to identify where the discrepancy occurred."

By Tuesday evening, the tabulations had been taken down, replaced by a new advisory that the ranked-choice results would be available "starting on June 30."

...

A comparison between first-place vote totals released on primary night and those released on Tuesday offered some insight into how the 135,000 erroneous votes were distributed. The bottom four candidates received a total of 42,000 new votes, roughly four times their actual vote total; the number of write-in ballots also skyrocketed to 17,516 from 1,336. Mr. Adams and Mr. Yang received the highest number of new votes.

It was not known, however, how the test votes were reallocated during the ranked-choice tabulations, making it impossible to determine how they affected the preliminary results that were released and then retracted. ...

RANKED CHOICE VOTING: Alaska US House '22 Special Election

Candidates:

- Nich Begich (R)
- Sarah Palin (R)
- Mary Peltola (D)

At a glance:

- 60% voted for a Republican 1st choice.
- Nick Begich (R) would have defeated Palin (R) or Peltola (D) head-to-head.
- Mary Peltola, the Democrat, won.
- 8% of votes were exhausted (not able to be counted in the final round between Peltola and Palin.)

Vote totals*:

- 53% preferred Begich over Peltola
- 61% preferred Begich over Palin
- 51% preferred Peltola over Palin

* Not counting exhausted ballots.

Takeaways:

- Palin was a 'Spoiler'. She split the Republican vote, causing them to lose.
- The Republican majority could have won if they had:
  a. not run two candidates.
  b. voted strategically for Nick Begich, the lesser evil.
- Ranking Palin 1st backfired and helped elect her supporters' last choice. If they hadn't voted at all, or had voted strategically, their 2nd choice would have won.
- Rather than electing the moderate from the majority faction, RCV fueled polarization by electing the minority faction candidate and flipping the seat.

Voters were wrongly told that:

a. it was safe to vote their conscience
b. their votes wouldn't be wasted
c. their 2nd choices would be counted if their first choice couldn't win
d. the majority preferred candidate would win
e. RCV isn't polarizing
f. RCV eliminates the Spoiler Effect

These misleading claims and concerning real world case-studies have spurred a wave of RCV bans. Seven states have now banned Ranked Choice Voting statewide.

Advocates have to stop selling RCV with false claims!

Sources and additional references: electionscience.org/commentary-analysis/rcv-fools-palin-voters-into-electing-a-progressive-democrat/ arxiv.org/pdf/2209.04764.pdf

Peer Review and Academic Articles on RCV

Ranked Choice was invented 150 years ago and there is a wealth of data on where it delivers and where it falls short.

RCV does well in races where only two candidates are competitive, and successfully eliminates "The Nader Effect" if a 3rd party candidate is truly non-viable.

But, in elections with multiple viable candidates Ranked Choice Voting breaks down, producing non-representative and counterintuitive results. For this reason RCV has not broken two party domination in the countries where it's been used the longest. RCV is not suitable for primary elections or general elections with multiple viable parties or candidates.

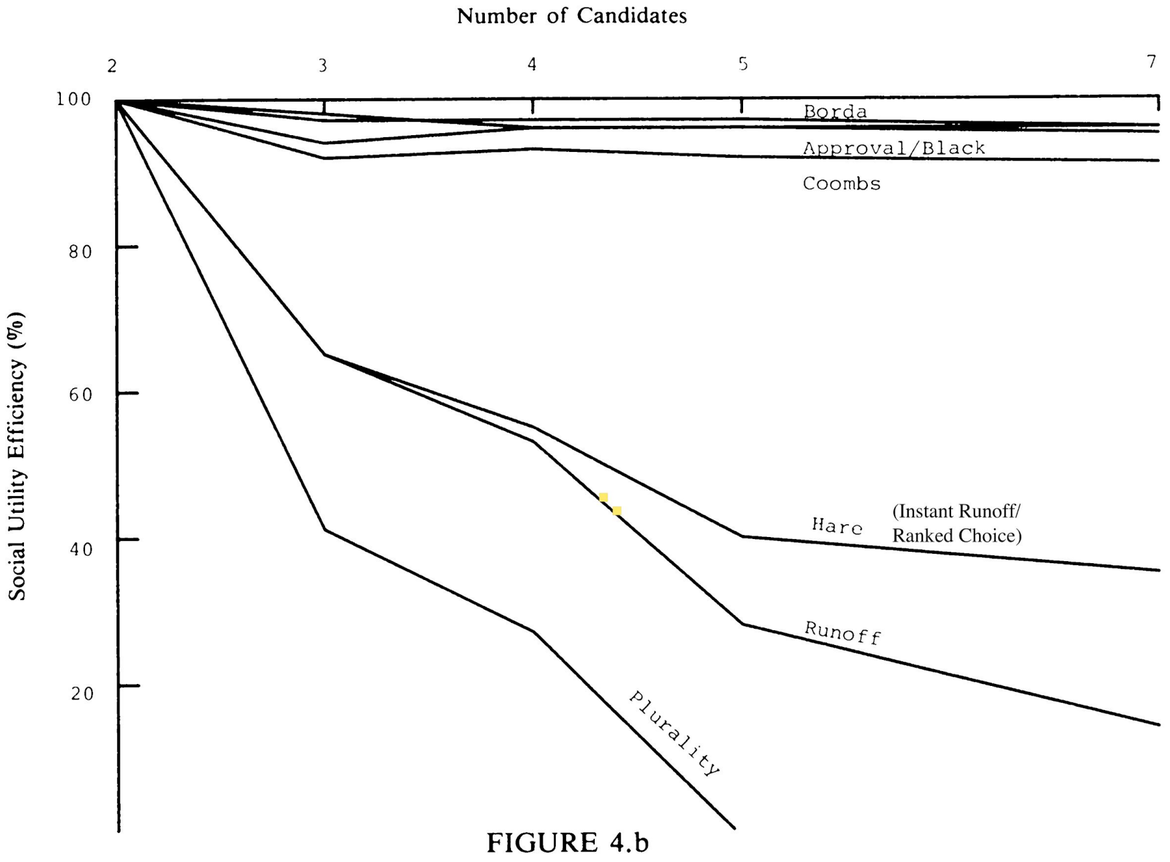


FIGURE 4.b

Social Utility Efficiency under Spatial Model Assumptions
(201 voters, two dimensions, correlation = .5, relative dispersion = .5)

Merrill, Samuel (1984). "A Comparison of Efficiency of Multicandidate Electoral Systems".

https://www.jstor.org/stable/2110786?seq=1

JOURNAL ARTICLE

Frequency of monotonicity failure under Instant Runoff Voting: estimates based on a spatial model of elections

Joseph T. Ornstein and Robert Z. Norman

Public Choice
Vol. 161, No. 1/2 (October 2014), pp. 1-9
(9 pages)
Published By: Springer

https://www.jstor.org/stable/24507512

"Instant Runoff Voting (IRV) suffers from a defect known as nonmonotonicity, wherein *increasing support* for a candidate among a subset of voters may *adversely affect* that candidate's election outcome"

https://www.jstor.org/stable/24507512

Abstract

It has long been recognized that Instant Runoff Voting (IRV) suffers from a defect known as nonmonotonicity, wherein increasing support for a candidate among a subset of voters may adversely affect that candidate's election outcome. The expected frequency of this type of behavior, however, remains an open and important question, and limited access to detailed election data makes it difficult to resolve empirically. In this paper, we develop a spatial model of voting behavior to approach the question theoretically. We conclude that monotonicity failures in three-candidate IRV elections may be much more prevalent than widely presumed (results suggest a lower bound estimate of 15 % for competitive elections). In light of these results, those seeking to implement a fairer multi-candidate election system should be wary of adopting IRV.

ELSEVIER

Electoral Studies
Volume 37, March 2015, Pages 41-49

Ballot (and voter) “exhaustion” under Instant Runoff Voting: An examination of four ranked-choice elections ☆

Craig M. Burnett [a], Vladimir Kogan [b]

Highlights

- Instant runoff voting does not guarantee winners who receive an absolute majority.
- The rate of ballot exhaustion was high in each election, ranging 9.6%–27.1%.
- Voters' inability to rank multiple candidates contributes to ballot exhaustion.

Abstract

Some proponents of municipal election reform advocate for the adoption of Instant Runoff Voting (IRV), a method that allows voters to rank multiple candidates according to their preferences. Although supporters claim that IRV is superior to the traditional primary-runoff election system, research on IRV is limited. We analyze data taken from images of more than 600,000 ballots cast by voters in four recent local elections. We document a problem known as ballot “exhaustion,” which results in a substantial number of votes being discarded in each election. As a result of ballot exhaustion, the winner in all four of our cases receives less than a majority of the total votes cast, a finding that raises serious concerns about IRV and challenges a key argument made by the system's proponents.

https://www.sciencedirect.com/science/article/abs/pii/S0261379414001395

* Note: This study looked specifically at elections in which a majority was not found in the first RCV round of tabulation.

THE CALIFORNIA *Journal of*
Politics & Policy

Francis Neely and Jason McDaniel
San Francisco State University

Overvoting and the Equality of Voice under Instant-Runoff Voting in San Francisco

"The controversy surrounding the 2000 U.S. presidential race fueled a variety of efforts to improve the administration of elections. Activists, benefiting from that momentum ... found some purchase at the local level in San Francisco, California. Proposition A passed in a 2002 March primary and replaced a two-round runoff system with instant-runoff voting (IRV).1 ... As the largest and longest-running application of IRV in the States, this serves as both a vanguard on the reform front and a test case for interested parties.2

"One concern in the discussion of any electoral reform is how well the public will understand a new system and what that implies for the equality of political voice. This is our focus. ... Concerns about the fairness of IRV led at least four jurisdictions to repeal similar reforms shortly after enacting them: Burlington, VT (2006–2009), Cary, NC (2007–2009), Pierce County, WA (2006–2009), Aspen, CO (2009).

"Higher counts of overvotes were also found, at times, among San Francisco communities with more Latino residents (Neely and Cook 2008), something shown in a similar analysis of voters in Los Angeles (Sinclair and Alvarez 2004), and in areas with more foreignborn residents."

"What has not changed is the nature of the discrepancies in who tends to overvote: consistently, precincts where more African-Americans reside are more likely to collect overvoted, voided ballots. And this often occurs where more Latino, elderly, foreign-born, and less wealthy folks live. The additional years of data show no meaningful increase or decline in these tendencies but rather bolster the earlier study's findings. In all of the elections we examined, some voters were more at risk than others of making disqualifying errors."

https://escholarship.org/content/qt8tm3s6hz/qt8tm3s6hz_noSplash_a5e40f23074e40a0b8a0be92279918ae.pdf

THE MAINE HERITAGE POLICY CENTER

A FALSE MAJORITY

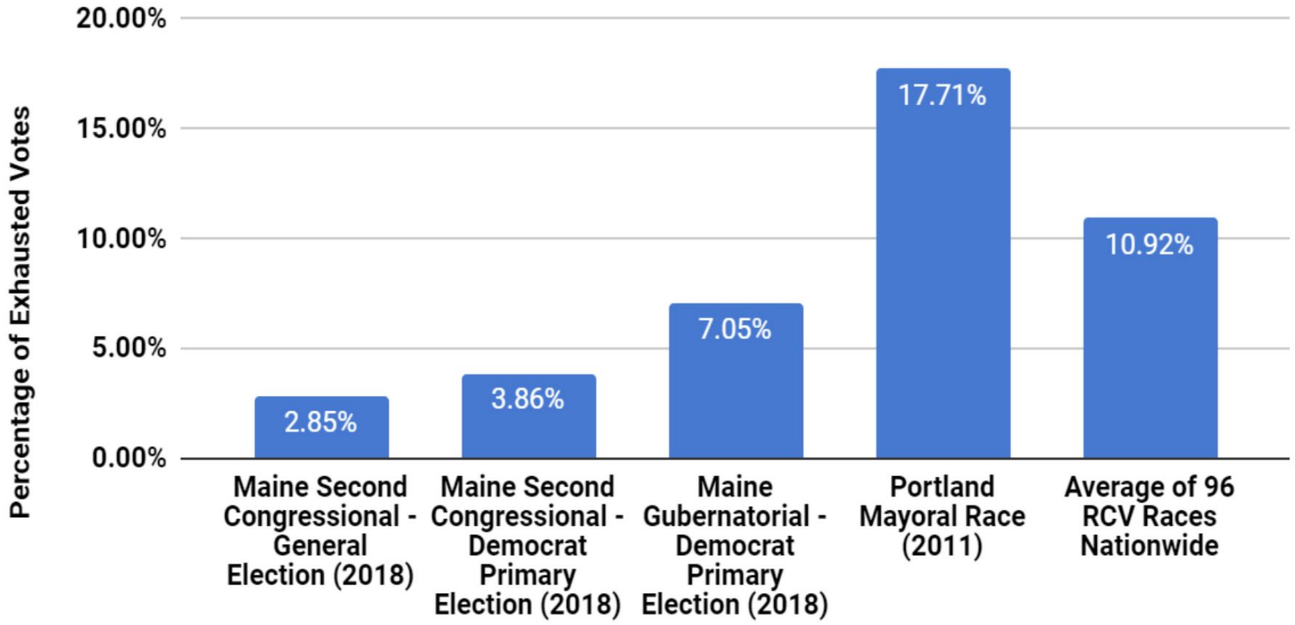
"African Americans, Latinos, voters with less education, and those whose first language is not English are more likely to be disenfranchised with a ranked-choice voting system."

When individuals leave columns blank on their ballots and the candidate(s) they vote for are eliminated from contention, their ballot is not counted in the final tabulation… thereby giving those who fully complete their ballot more influence over the electoral process."

"only 50 percent of African Americans and 53 percent of Latinos ranked three candidates whereas 62 percent of whites ranked a candidate in all three columns."

"When we examined the 96 ranked-choice voting races in our sample from across the nation, our analysis found an average of 10.92 percent of ballots cast are exhausted by the final round of tabulation."

Figure 1: Percentage of Exhausted Votes in Ranked-Choice Elections (Maine and Nationally)



Source: Maine Secretary of State, The Maine Heritage Policy Center

https://mainepolicy.org/wp-content/uploads/RCV-Final-Booklet-.pdf

THE MAINE HERITAGE POLICY CENTER

A FALSE MAJORITY

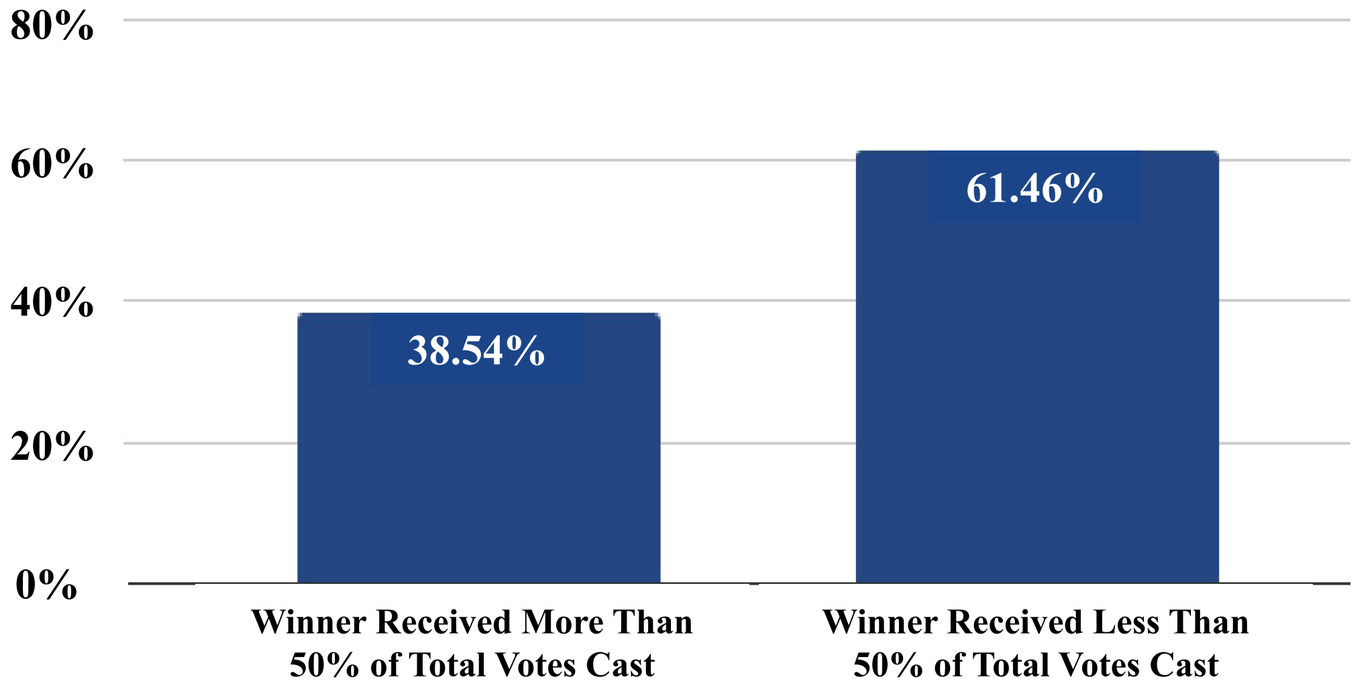
"Too often, proponents of ballot initiatives advance lofty claims to win support at the ballot box."

"In examining 96 ranked-choice voting races from across the country where additional rounds of tabulation were necessary to declare a winner, The Maine Heritage Policy Center concludes that the eventual winner failed to receive a true majority 61% of the time."

"the claim that ranked-choice voting always provides a majority winner … is false and deserves further scrutiny from voters."

"While candidates sometimes do receive a majority of the total votes cast, a winner is often declared only after a large number of exhausted ballots have been removed from the final denominator."

Figure 5: Percentage of Competitive RCV Elections That Did Not Result In A Majority Winner



Source: The Maine Herritage Policy Center

www.scribd.com/document/421886759/RCV-Final-Booklet#fullscreen&from_embed

Minority Electorates and Ranked-Choice Voting
Executive Summary

Nolan McCarty[1]

January 10, 2024

Following the rise of political polarization in the United States and its negative consequences for effective governance, many scholars and activists have turned to electoral reform as a corrective. Some arguments have focused on certain perceived deficiencies associated with the United States' reliance on the combination of plurality voting and party primaries to elect most officeholders. The critics contend that such a combination leads to pathologies that reduce voter choice and generate polarized outcomes.

First, the critics argue that partisan primaries are dominated by the preferences of the most extreme voters who in turn nominate only extreme candidates leading to general elections in which voters must choose among polarized alternatives. Second, they argue that the use of plurality voting deters the entry of independent candidates and third-parties because they are very unlikely to obtain a plurality of the vote. Moreover, if such candidates do enter, they mostly serve as "spoilers" by elevating one candidate over another, often the less popular of the major party candidates. Finally, some scholars argue that the winner-take-all nature of plurality elections heightens conflict and negative campaigning in ways that heighten polarization.

To address these concerns, scholars and advocates have touted a set of reforms ranging from altering the rules for participation in primary elections, fusion voting, and various forms of proportional representation. But by far and away the most popular reform calls for the widespread adoption of ranked-choice voting (RCV). In a RCV election, voters rank a set of candidates, and election officials use these rankings to determine the election winners. In general, the system operates as follows:

- The ballot asks voters to rank the candidates in order of the voter's preference. In some systems, they can rank all of the candidates while others ask only that the voters rank up to a certain number of candidates.

- The first stage of the vote tabulation procedure counts the first rank votes. If any candidate receives a majority of the first rank votes, she wins the election. This is often referred to as the "first round."

- If there is no majority winner in the first round, the last place candidate, as well as any additional candidates that have been mathematically eliminated, are eliminated from the tabulation, and the vote tabulation proceeds to a "second round."

[1] Susan Dod Brown Professor of Politics and Public Affairs, School of Public and International Affairs, Princeton University, nmccarty@princeton.edu. This research is partially supported by the Center for Election Confidence.

- In the second round, the votes are recounted using the first ranked votes of the remaining candidates and the second ranked votes of those who supported one of the eliminated candidates.

  If a candidate obtains a majority on this round, she is the winner. If not, the process continues to a third round, and so on, with candidates being eliminated in each round while counting first, second and third or subsequent ranked votes, until there is a winner receiving a majority of first rank votes plus subsequent ranked votes.

- Significantly, if a voter's first rank is for a candidate who is eliminated, but does not rank a candidate still standing in a subsequent round, that voter's ballot is "exhausted" and eliminated from subsequent tabulation rounds.

Advocates of RCV suggest many ways in which it would improve upon plurality voting. First, the promoters contend that the system improves the electoral fortunes of small parties and independent candidates. By encouraging a larger set of candidates to contest office, advocates argue that RCV provides voters with more choice, which in turn should result in greater voter turnout and engagement. RCV also purportedly eliminates the possibility of spoiler candidates who siphon off too many votes from the most popular major candidate. Finally, advocates argue RCV elections are more legitimate because the winner has earned the support of a majority of the electorate.

As discussed in my research paper, the evidence that RCV has demonstrated these advantages in practice is mixed, at best. But even if RCV elections achieve the touted features, RCV raises important questions about the impact on minority and disadvantaged voters and their opportunities for electoral representation and effective influence in election outcomes.

First, RCV elections, by design, are more majoritarian than plurality elections. Indeed, a common argument is that they provide a way to get the benefits of a majority-runoff system without holding separate elections. Whereas minority candidates have some chance of winning plurality elections when votes are closely divided between majority-group candidates, RCV works to reduce those opportunities especially in the presence of racially or ethnically polarized voting. RCV advocates may defend that attribute by arguing that RCV would increase the likelihood that the majority-candidate most favorable to the minority group wins. But such an outcome depends on majority candidates willing to appeal to minority voters to obtain their second-preference votes and for the minority voters to fully use their ballots to support such candidates in the later rounds. However, if the preferences of the majority and minority groups are sufficiently distinct, both majority candidates may compete for the support of majority voters in hopes of entering a second round against the minority-backed candidate in which they will win. Moreover, minority-group voters may "exhaust" their ballots and fail to rank either majority-backed candidate. Thus, such voters lose influence in the case of a majority-versus-majority second round. Such arguments highlight the problems of ballot exhaustion which previous research has found to be both endemic to RCV and concentrated in minority electoral precincts.

Given these concerns, my paper focuses on the concentration of exhausted ballots among minority electorates as well as its potential to decrease representation and electoral influence of minority voters. Specifically, I examine two cases in which RCV was recently adopted and show that exhausted ballots were far more common in precincts and electoral districts with high concentrations of minority voters. The first case is the New York City Democratic Primary elections held in 2021. Using micro-data on cast vote records (CVR) combined with demographic records of primary voters from the voter registration file, I show that electoral districts with large concentrations of minority voters cast substantially more exhausted ballots than other districts. These correlations persist even in those cases where a co-ethnic candidate advances to the final round of tabulation. I then examine the introduction of the Top Four Primary system and RCV general election in Alaska. There I combine the cast vote records with Census demographics to examine the correlates of ballot exhaustion in the special and regular elections held there in 2022. I find that areas with high concentrations of Native Alaskans are more prone to ballot exhaustion.

Key Findings

- Except in cases where a co-ethnic reached the final round of tabulation, I find that exhaustion rates in the NYC Democratic primaries for executive office were higher in precincts with high concentrations of minority (Black, Asian, and Hispanic) primary voters than they were in predominately White precincts.

- Exhaustion rates in the NYC Democratic mayor's primary were lower for Black electorates than White electorates. But this was the result of high Black support in first-rank preferences for Eric Adams who proceeded to the final round and won the election. Exhaustion rates in Black precincts were higher than those of White precincts among those voters who did not rank Adams first.

- In the executive office primaries, the proportion of voters ranking only a single candidate was generally higher in minority precincts.

- In the Democratic primaries for City Council, ballot exhaustion was as high as the rates of wasted votes (votes for non-competitive candidates) in the plurality elections of 2017. Moreover, the 2021 RCV elections had fewer majority winners and had lower winning margins than 2017 plurality elections. Both of these outcomes run contrary to the arguments proffered by RCV advocates. These patterns can be explained primarily by the vast proliferation of candidates under RCV.

- In the Council elections, exhaustion rates were considerably higher in minority precincts than in predominately White ones. These disparities were lower, however, when there was a co-ethnic candidate in the final round. The racial and ethnic disparities were greatest when there were a large number of candidates. This result suggests that minority electorates were less able to take advantage of the expanded "choice" of candidates.

- Ballot roll-off (also known as "drop-off" in down-ballot races) between the mayor and Council primaries was much larger in 2021 under RCV than in 2017 under plurality. This is contrary to claims that RCV would boost voter engagement. Moreover, roll-off rates tended to be the highest in minority precincts, especially when there was not a strong co-ethnic candidate.

- The results in Alaska largely confirm those of NYC for heavily Alaskan Native precincts. Their exhaustion rates were higher in all state-wide races and for state legislative races except in the case of the U.S. House election which featured a co-ethnic winner.

Conclusions

Partisan polarization and related political dysfunctions have greatly increased interest in fundamental reforms to our electoral processes. But such reforms often come with a variety of trade-offs and unintended consequences. Therefore, careful scrutiny and evaluation of the effects of reforms is crucial.

Ranked choice voting is clearly a reform that has excited a lot of people. Its advocates suggest that it can both turn down the temperature surrounding electoral politics and increase the diversity of choices available to voters. But scholarly attempts to evaluate such claims and to root out the downsides are still in their infancy. In my paper, I try to evaluate one such downside -- the high rates of ballot exhaustion and their concentration in precincts with large minority populations. The findings suggest that these are indeed drawbacks of RCV. Across a variety of electoral contexts in New York City and Alaska, I find consistent correlations between the ethnic and racial composition of a precinct and the share of exhausted ballots. These correlations are especially large when there are large numbers of candidates and when there are not strong co-ethnic candidates in the race.

These findings are consistent with RCV providing an advantage to majority-group voters over minority-group voters. Whereas RCV allows majority-group voters an additional opportunity to resolve candidate coordination problems, the patterns of ballot exhaustion suggest that minority-group voters are not taking full advantage. Whether those higher rates of exhaustion are due to ballot complexity, lower levels of information and mobilization, or racial and ethnic polarization, it is clear that the potential effects of RCV on minority voters needs to be carefully scrutinized before adoption.

Minority Electorates and Ranked Choice Voting

Nolan McCarty*

January 10, 2024

Abstract

Ranked Choice Voting (RCV) has become a very popular reform designed to mitigate several of the perceived flaws inherent in single-district plurality electoral systems. However, relatively little attention has been paid to how RCV might impact the representation and influence of minority voters. In theory, RCV poses several difficulties for minority representation. First, RCV is by design a majoritarian system in that the winner must claim the support of a majority of the participating voters. Thus, RCV forecloses opportunities under plurality voting for minority-group-backed candidates to win elections when majority-group voters fail to coordinate on a single candidate. Second, this problem is compounded to the extent that majority-group candidates lack incentives to appeal to minority-group voters. Such incentives will be lacking to the extent to which minority voters are unwilling or unable to rank multiple candidates. So patterns of ballot exhaustion and truncation across demographic groups is key to understanding how RCV might affect opportunities for minority-group voters. Third, high ballot exhaustion rates among minority-group voters would mean that those voters exercise less electoral influence. In this paper, I examine the racial and ethnic patterns of ballot exhaustion in the 2021 New York City Democratic Primary and the 2022 elections in Alaska. I find strong evidence that electorates with heavy concentrations of ethnic and racial minorities have substantially higher rates of ballot exhaustion. These findings raise important questions about the impact of RCV on the electoral influence of such groups.

*School of Public and International Affairs, Princeton University, nmccarty@princeton.edu. This research is partially supported by the Center for Election Confidence. I would also like to thank Eric Manning and the data Driven Data Science Initiative for assistance in navigating the voter files. I also thank Roel Bos, Peter Buisseret, Dahyun Choi, Alina Dunlap, Kyuwon Lee, John Kastellec, Conner Phillips, Anthony Taboni, and Hye Young You for helpful comments.

1 Introduction

Following the rise of political polarization in the United States with its negative consequences for effective governance, scholars and activists have touted electoral reform as a possible solution.[1] These arguments have focused on perceived deficiencies associated with the United States' reliance on the combination of plurality voting and party primaries to elect most officeholders. According to the critics that combination leads to pathologies that reduce voter choice and generate polarized outcomes. First, the critics claim that partisan primaries are dominated by the preferences of the most polarized voters who in turn nominate only extreme candidates leading to general elections in which voters must choose among polarized alternatives. Second, they argue that the use of plurality voting deters the entry of independent candidates and third-parties because they are very unlikely to obtain a plurality of the vote. Moreover, if such candidates do enter, they mostly serve as "spoilers" by elevating the less popular of the major party candidates. Finally, some scholars argue that the winner-take-all nature of plurality elections heightens conflict and negative campaigning in ways that exacerbate polarization.

To address these concerns, observers have suggested a set of reforms ranging from altering the rules for participation in primary elections, fusion voting, and various forms of proportional representation. But by far and away the most popular reform calls for the widespread adoption of ranked-choice voting (RCV). In a RCV election, voters rank candidates in order of preference, and election officials use these rankings to determine the election winners. Although advocates argue for a wide range of procedures, actual implementations of RCV tend to operate as follows:[2]

1. The ballot asks voters to rank the candidates in order of preference. In some systems, voters may rank all of the candidates while others systems ask only that the voters

[1] For discussions of polarization and electoral reform McCarty (2019) and Drutman (2020).
[2] See Santucci (2021) for a discussion of the procedural variants.

rank up to a certain number of candidates.

2. The first round of the tabulation procedure, counts the first-rank votes. If any candidate receives a majority of the first-rank votes, she wins the election. If no candidate secures such a majority, the last place candidate, as well as any other candidates that have been mathematically eliminated, are dropped, and the tabulation proceeds the second round.

3. In the second round, the votes are recounted using the first-ranked votes of the remaining candidates and the second-ranked votes of those who supported one of the eliminated candidates. Those voters who only ranked one of the eliminated candidates are said to have "exhausted" their ballots.

4. If a candidate obtains a majority of the votes from non-exhausted ballots in this round, she is the winner. If not, the process continues through multiple rounds where votes are tabulated based on each voter's highest ranking of the non-eliminated candidates. A winner is declared once a candidate obtains a majority of the votes from the non-exhausted ballots.

Advocates of RCV tout many ways in which it would improve upon plurality voting. First, the promoters contend that the system improves the electoral fortunes of small parties and independent candidates. By encouraging a larger set of candidates to contest office, advocates argue that RCV provides voters with more choice, which in turn should result in greater voter turnout and engagement. RCV also purportedly eliminates the possibility of spoiler candidates who siphon off so many votes that the most popular major candidate loses. Finally, advocates suggest RCV elections are more legitimate because the winner is required to earn the support of a majority of the electorate.

As discussed below, the evidence that RCV has demonstrated these advantages in practice is mixed. But even if RCV elections achieve the promised features, their usage raises

important questions about the impact on minority and disadvantaged voters and their opportunities for electoral representation. First, RCV elections are intended to be more majoritarian than plurality elections. Indeed, a common argument is that they provide a way to get the benefits of a majority-runoff system without holding separate elections.[3] Whereas minority candidates have some chance of winning plurality elections when there is a close split in the vote among majority-group candidates, RCV works to reduce those opportunities especially in the presence of racially- or ethnically-polarized voting. RCV advocates defend that attribute by arguing that RCV would increase the likelihood that the majority-candidate most favorable to the minority group wins. But such an outcome depends on majority candidates' willingness to appeal to minority voters to obtain their second-rank votes and for the minority voters to fully use their ballots to support such candidates in the later rounds. But recent theoretical work by Buisseret and Prato (2022) casts doubt that such conditions hold generally. In their model, if the preferences of the majority and minority are sufficiently distinct, both majority candidates may compete for the support of majority voters in hopes of entering a second round against the minority-backed candidate in which they will win. Moreover, minority group voters may exhaust their ballots and fail to rank either majority-backed candidate. Thus, minority voters may actually lose influence in the case of a majority-versus-majority second round. Such arguments highlight the problems of ballot exhaustion which previous research has found to be both endemic to RCV and concentrated in minority electoral precincts.[4]

In this paper, I contribute to the literature on RCV and ballot exhaustion by focusing on its disproportionate concentration among minority electorates as well as its potential to decrease representation and electoral influence of minority voters. In section 2, I sketch an

[3]For this reason, some advocates refer to the system as Instant Runoff Voting.

[4]On the magnitude of ballot exhaustion, see Burnett and Kogan (2015) and McCarty (2020). On the correlations with race and ethnicity see Polubinksi (2023) and `https://www.politico.com/states/new-york/city-hall/story/2021/09/08/lower-income-areas-of-nyc-had-a-harder-time-with-ranked-choice-voting-1390719`.

argument that RCV systems can be harmful to minority voters especially when those voters are more likely to exhaust ballots. I then examine two cases in which RCV was recently adopted and show that exhausted ballots were far more common in precincts and electoral districts with high concentrations of minority voters. The first case is the New York City Democratic Primary held in 2019 which is discussed in Section 3. Using micro-data on cast vote records (CVR) combined with demographic records of primary voters from the voter registration file, I show that electoral districts with large concentrations of minority voters cast substantially more exhausted ballots than other districts. These relationships are especially strong in heavily Hispanic and Asian districts. These correlations persist even in those cases where a co-ethnic candidate advances to the final round of tabulation. In section 4, I examine the introduction of the Top Four Primary system and RCV general election in Alaska. There I combine the cast vote records with Census demographics to examine the correlates of ballot exhaustion in the special and regular elections held there in 2020. Given the very low numbers of Black and Hispanic voters (and the political salience of those identities), I do not find strong correlations between exhaustion and the size of those populations. I do find, however, that areas with high concentrations of Alaskan Natives are more prone to ballot exhaustion. I conclude and discuss the implications of the results in section 5.

2 Theoretical Framework

To illustrate how RCV may negatively impact minority voters, consider a hypothetical example where there are three candidates representing three blocs of voters.[5] I label the candidates/blocs as A, B, and C. Further, I assume that blocs A and B are part of the "majority" group and C is the "minority." Consequently, the total number of voters

[5]See Buisseret and Prato (2022) for a more fully-elaborated model along the lines of this example.

in A and B is larger than the number of voters in C.[6] However, bloc C may be larger than either bloc A or B individually. Moreover, I assume that no single bloc constitutes a majority of the electorate. Assuming that voters in each bloc vote sincerely for the candidate representing them, plurality elections elect the candidate of the largest bloc. Voters may, however, choose to vote strategically. If majority-group voters are able to coordinate electoral support for candidate A or B, then that candidate wins. If they fail, however, the minority candidate C may win.

Now consider the effects of ranked choice voting. As a first case, assume that C is the largest single bloc and would therefore win a first-past-the-post election. Without loss of generality, let A be the second largest bloc. Under the assumption that all voters give the highest rank to the candidate of their bloc, C does not win in the first round. Moreover, the winner is determined by how voters in B allocate their second ranks between A and C. If B prefers A as we might expect on shared in-group status, then A wins. Thus, RCV has insured that majority voters can coordinate on a single candidate, making it impossible for the minority candidate to win.[7]

As a second case, assume that C is the smallest group. Consequently, the second round is likely to be a contest between the majority candidates A and B. C's only opportunity for influence is when its second-place ranks to help elect the majority candidate most sympathetic to its interests. Ideally, the majority candidates would appeal to C's voters to enhance their electoral prospects. But suppose C's voters "exhausted" their ballots by failing to rank A or B. This behavior would both reduce the likelihood that the most sympathetic majority candidate would win as well the incentives for either majority candidate to compete for C's support. The C voters will, therefore, have less influence if their exhaustion rates are high.

[6]Depending on the context, majority and minority may be designated based on racial, ethnic, socio-economic or partisan categories.

[7]See Morton and Rietz (2007) for a similar argument and consistent experimental evidence in the context of traditional runoff elections.

These two examples illustrate how minority electorates may be negatively impacted by the adoption of ranked-choice voting. First, RCV helps to ensure that majority voter blocs can coordinate on a single candidate thereby depriving minority voters of the ability to elect a candidate of choice even in cases where the minority bloc is the largest. Second, RCV may dilute minority voter influence to the extent to which those voters exhaust their ballots by failing to rank the majority-group candidates.

As the second example shows, the impact of RCV on minorities depends on the extent to which they disproportionately cast "truncated ballots" (i.e., ballots that doe not rank all alternative, viable candidates) that lead to their non-participation in the final round of tabulation. Consequently, much research on RCV focuses on truncation and ballot exhaustion, see e.g. Burnett and Kogan (2015). In a study of municipal elections in three cities, Polubinksi (2023) finds strong evidence that rates of ballot exhaustion are higher in precincts with heavy concentrations of minority voters. [8]

Other scholars have noted that minority electorates have faced other challenges in using RCV. Neely and Cook (2008) and Neely and McDaniel (2015) find that rates of RCV overvoting, applying the same rank to multiple candidates, was significantly higher in minority precincts in San Francisco municipal elections. More recently, Cormack (2023) finds that ballot disqualifying overvoting was higher in non-White assembly districts in the 2021 NYC mayoral primary, and that correlation can be attributed to lower incomes and educational attainment.

Perhaps the most important question for my purposes is why voters would choose

[8]Survey experimental work has found less evidence for racial and ethnic disparities in ballot truncation or exhaustion. But these studies may suffer a lack of external validity. For example, Coll (2021) asks respondents to rank the top five 2020 Democratic presidential candidates and finds that age and gender are the only demographic categories correlated with truncation. But this setting may not generalize for a variety of reasons. First of all, the 2020 primary was a very high profile election where voters could be assumed to have reasonably good information about a wide variety of candidates – far different than the elections analyzed in this paper. Second, as discussed below, the presence of strong minority candidates like Kamala Harris and a White candidate with strong endorsements from Black elites, Joe Biden, can affect patterns of truncation and exhaustion relative to elections without such candidates.

not to fully participate by truncating their ballots. Voters who truncate their ballots are deprived of potential opportunities to influence the election outcome, even though their preferences among lower ranked candidates may be decisive. In fact, if the goal of a voter is to maximize electoral influence, she should always rank at least $n-1$ candidates in an n candidate election.[9]

Underscoring this problem, Kilgour, Grégoire and Foley (2020) conduct a simulation study of the consequences of truncated ballots in RCV elections. The authors find that ballot truncation is very common and hard to rationalize. But more importantly, the authors demonstrate how some of the supposed salutary properties of RCV fail when voters do not fully participate. First, they find that even small amounts of truncation can alter the identity of the election winner, especially in elections with more than three candidates. Often these distortions disadvantage and result in outcomes that are contrary to the will of the voter whose ballot is truncated.

Given the lack of a clear strategic motive, there are at least two other explanations for why voters might truncate ballots. The first is that voters are voting expressively and refuse to rank any candidates but their top choice. The most plausible form of such behavior is based on partisanship or group-identity – voters refuse to rank candidates from their out-party or group. While such behavior may be intentional and well-informed, it does undermine the stated objectives of RCV elections. Low rates of full participation make it less likely that the winner is supported by a majority of the total electorate, more likely that a candidate can be a spoiler, and less likely that a Condorcet winner is victorious. Moreover, persistence of this form of expressive partisanship and/or identity politics suggests that RCV is not succeeding in building cross-party/group coalitions and reducing polarization. Specifically, racial polarization may manifest as ballot truncation

[9]Unless of course the ballot design limits the number of candidates that can be ranked. Such limitations are commonly imposed for the convenience of electoral authorities, but they obviously exacerbate the problem of ballot exhaustion. Below I present evidence that such limitations have only a modest effect on ballot exhaustion.

and exhaustion. Most importantly, as discussed above, it may dampen the incentive for candidates to appeal to those groups who tend to exhaust their ballots. Moreover, as candidates reduce their appeal to high exhaustion groups, members of those groups have even less incentive to fill out complete ballots.

A second source of ballot truncation and exhaustion is that voters have poor information about how RCV tabulation works or lack adequate information about candidates necessary to do a full ranking. That truncated votes count less than fully participating ones suggests the possibility that low information voters may be relatively disadvantaged by RCV. Such variances in participation rates based on information gaps are troubling. And if those information disadvantages are concentrated on certain communities on the basis of race, ethnicity, education, or socio-economic status, the democratic legitimacy of RCV might be called into question.

My paper does not address other potential effects of RCV on minority electoral success and representation. But the prior literature suggests few benefits. McDaniel (2016) finds that turnout dropped in San Francisco mayoral elections following the adoption of RCV, especially among African-Americans and Asians. In a study of several RCV cities matched against comparable plurality cities, Kimball and Anthony (2016) find a four percentage point drop in turnout associated with RCV, although the estimate is not statistically significant on its own. In a more recent study, McDaniel (2019) finds a statistically significant five percentage point drop due to the introduction of RCV in municipal elections relative to similar cities that maintain plurality electoral systems. While there is disagreement about the magnitude and statistical reliability of the estimated declines in voter turnout, I am not aware of any study that finds a boost in turnout associated with switching to RCV from plurality voting.

I also do not consider whether RCV increases or decreases the salience of racial and ethnic differences. But McDaniel (2018) finds indicates that RCV did little to reduce –

and may have increased – racially polarized voting in mayoral elections. Finally, I do not consider effects of RCV on the pool of minority candidates, but note that Colner (2023) finds a modest, but short-lived, boost in the diversity of the candidate pool upon adoption of RCV. Experimental work reported by Santucci and Scott (2021) finds that RCV does not increase minorities' interest in running for office. More generally, Vishwanath (2022) finds that RCV has little effect on the ideological composition of the candidate pool.

3 New York City Democratic Primary

After several years of study, in 2019 the New York City Charter commission proposed a voter referendum calling for the use of RCV voting in NYC municipal elections. The referendum was supported by 75% of those voting in a low turnout affair. The most direct motivation for the adoption of RCV was the elimination of costly runoff elections necessitated by the NYC Charter's requirement for plurality winners with at least 40% of the votes cast. But advocates touted many other claims about RCV's ability to produce majority winners, lessen negative campaigning, and promote moderation. To the extent that there was opposition, however, it focused on the possible negative consequences for minority and poorer voters.[10]

The first use of RCV voting in NYC was for the city-wide primary elections held on June 22, 2021. Those elections nominated candidates for Mayor, Comptroller, Public Advocate, the five Borough Presidencies, and the City Council. Although RCV was used in the Republican and Conservative party primaries, I focus on the Democratic primary. Table 1 reports some basic information about the outcomes of those contests. The table illustrates several important points.

The first is that even in elections with large numbers of candidates, the leading candidate

[10]See `https://www.nytimes.com/2019/10/28/nyregion/ranked-choice-voting-ny.html` and `https://ibo.nyc.ny.us/cgi-park3/2019/10/22/eliminate-the-need-for-citywide-run-off-elections/`.

Table 1: 2019 NYC Democratic Primary Outcomes

Election	# Cands	Winner	Runner-Up	Round 1 Plurality	Final Share	Share of Total	Rounds	% Exhausted
Mayor	13	Eric Adams	Kathryn Garcia	30.7	50.4	42.9	8	14.9
Comptroller	10	Brad Lander	Corey Johnson	30.9	51.9	39.3	10	24.4
Public Advocate	3	Jumaane Williams	Anthony Herbert	70.0	70.0	70.0	1	0.0
Manhattan President	7	Mark Levine	Brad Holman	28.3	53.8	42.4	7	21.2
Brooklyn President	12	Antonio Reynoso	Jo Anne Simon	27.9	54.9	37.3	11	32.0
Queens President	3	Donovan Richards	Elizabeth Crowley	41.1	50.3	47.2	3	6.2
Bronx President	5	Vanessa Gibson	Fernando Cabrera	39.5	53.5	48.7	3	9.0
Staten Island President	5	Mark Murphy	Lorraine Honor	46.5	65.0	57.5	6	11.5

received a very large vote share. Only in two cases did the leading candidate fail to get 30% of the vote. In three cases, candidates received more than the 40% threshold that would have avoided a runoff under the old system. In every case, the first round plurality winner went on to win after the RCV tabulations were conducted.[11] A second notable finding is the large number of exhausted votes. With the exception of the Public Advocate's race which was decided in a single round, the rates of exhaustion are very high. In a recent report, McCarty (2020) shows that the average rate of ballot exhaustion across 95 municipal RCV elections is 10.5%. Therefore, five of the seven contests with RCV tabulations were well above the historical norm. Moreover, exhaustion may have been consequential in some cases. In six of these elections, the percentage of exhausted votes exceeded the margin between the final two candidates. This fact implies that had there been fewer exhausted ballots, the results may have changed. This pattern also implies that in those elections, the winner failed to obtain support from a majority of voters who cast ballots in the election (see "Share of Total" column). In two cases, the Comptroller and Brooklyn President, the winner did not even crack 40% of the votes cast, the old threshold for triggering a runoff election under the Charter. These outcomes are troubling given that RCV is touted as producing winners supported by a majority of the electorate.[12]

[11] In the case of public advocate, Jumaane Williams won in the first round, therefore avoiding RCV tabulation.

[12] It might be tempting to blame these high exhaustion rates on the fact that the ballot only allowed voters to rank up to five candidates. But note that there are minority winners in two races with five or fewer candidates – the Bronx and Queens presidencies. Moreover, in the Mayor's race, the average exhaustion rate of those who ranked five candidates was only 6.4% compared to 21.8% for those who ranked fewer. So exhaustion rates would have been high even without the five candidate limitation.

Table 2: 2019 NYC City Council Primary Outcomes

Number	Avg Cands	One Round	Multi Round	RCV Reversals	Sub-Majority Outcomes	Avg Exhaust Rate (all)	Avg Exhaust Rate (multi-round)
46	6.4	14	32	2	19	12.4	17.8

Table 2 provides a similar set of measures for the outcomes of the 46 contested City Council primary elections. Those elections witnessed an average of over six candidates, but over a quarter of them were resolved in the first round. But of the 32 elections that required RCV tabulations beyond the first round, only two cases generated a winner different from the candidate who secured a plurality in the first round. One of these was in District 9 where Kristin Richard Jordan squeaked by incumbent Bill Perkins by 114 votes after 13 rounds of tabulation. But Jordan ultimately only received support from 32% of the total ballots cast in the election – a considerably lower percentage than the 36% of ballots that were exhausted! And District 9 was not alone in producing winners who failed to receive a majority of the votes cast and high rates of ballot exhaustion. In fact a majority – 19 elections – of the multi-round RCV calculations resulted in non-majority winners. Figure 1 provides the distribution of the winner's share in RCV-tabulated races and shows that there were a large number of outcomes in which the winner failed to get as high as even 40% of the total ballots cast.

Of course, the reason that such a large share of races lacked an overall majority winner was that exhaustion rates in the council elections were extraordinarily high. Table 2 reports two measures. The first is the average exhaustion rate for all contested council elections, 12.4%. But of course, races that were resolved in the first round have no exhausted ballots. So if we focus on the cases that required RCV tabulation, the rate is much higher at 17.8%.[13]

One objection to my focus on non-majority outcomes and wasted votes under RCV is

[13]As I discuss below, there is a way to measure "potential exhaustion" in single round outcomes by considering whether a voter's ballot would have been exhausted had the majority threshold not been met in the first round. Such calculations are not included in Table 2.

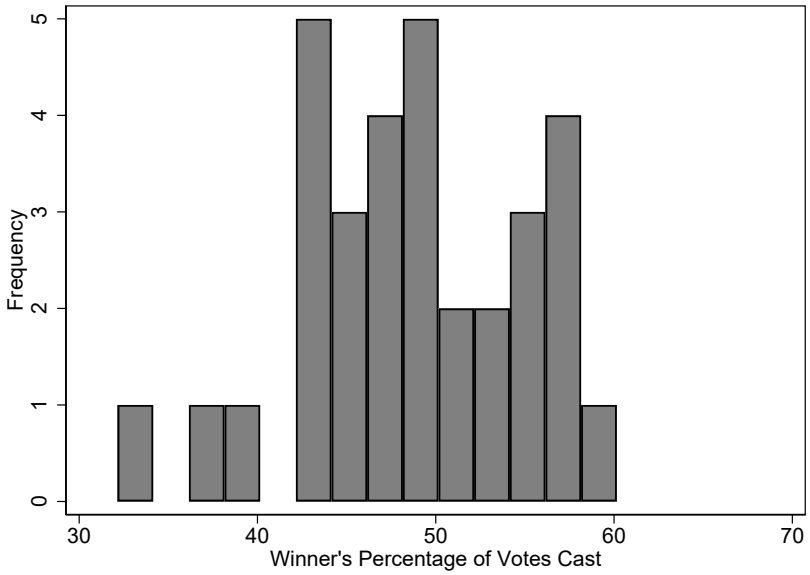


Figure 1: **Winner's Share of Votes Cast** Figure includes those races which required multiple rounds of tabulation.

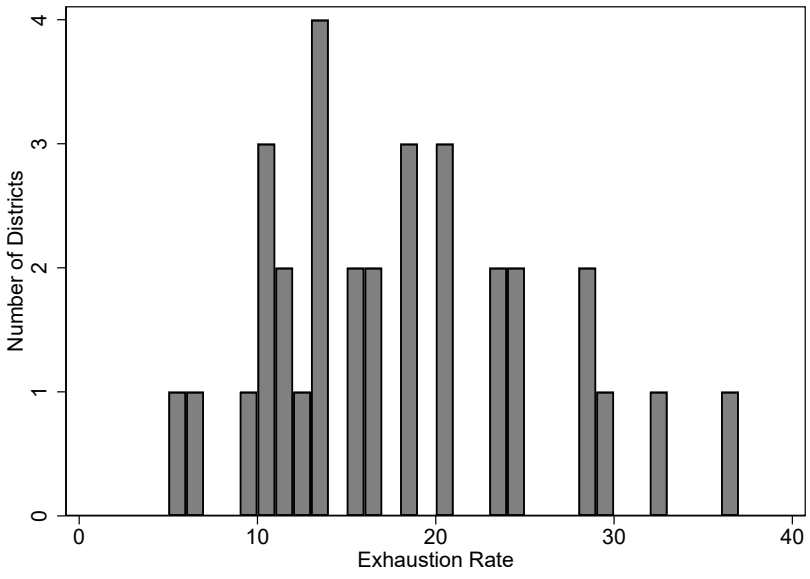


Figure 2: **Ballot Exhaustion Rates in NYC Council Democratic Primary Races** Figure includes those races which required multiple rounds of tabulation.

that similar problems clearly exist with plurality voting. Plurality voting generates non-majority outcomes and suffers from the problem of "wasted votes" – those going to a candidate with little chance of winning. To address this concern, I collected data on the 33 contested Democratic City Council primary elections in 2017. From that data, I can compute the vote shares of the winner and the number of wasted votes (which I define as a vote for a candidate other than the winner and the runner-up).

As it turns out, the data confirm that rates of vote exhaustion under RCV were approximately the same as the average wasted votes under plurality. Focusing on all contested races in both elections, the average percentage of exhaustion across districts was 12.4% while the average wasted votes was 12.2%. Moreover, the average winning percentage under plurality in 2017 was higher than the percentage under RCV (58.8% versus 52.3%). Similarly, plurality voting produced a lower rate of non-majority winners than RCV (33.3% versus 41.3%).

So why did RCV fail to outperform plurality voting on these key metrics? The answer is that RCV generated high levels of candidate entry. In 2021 under RCV, 46 nominations were contested with an average of 6.4 candidates per race. In 2017, only 33 districts were contested with 3.4 candidates per race. In the appendix, I report on an analysis of differences between RCV and plurality in terms of majority support and the differences between exhaustion and "wasted votes" as a function of the number of candidates. The analysis of winner's share demonstrates that those shares fall as the number of candidates rise under both RCV and plurality. Understandably, the ability to transfer votes under RCV reduces the impact of additional candidates compared to plurality.[14] However, there is no direct impact of RCV, and the winners' shares for races with 2 to 5 candidates do not vary systematically across systems. RCV only outperforms when there are a very large number of candidates. But in those cases RCV is never sufficient to produce a majority

[14]See Figure 6 and Table 8.

winner.

The results on exhaustion and wasted votes provided in the appendix are similar.[15] There is no statistically significant direct association with RCV, but the system does reduce the impact of additional candidates. Under plurality, each additional candidate is associated with a six percentage point increase in the number of wasted votes while such an increase was three points under RCV. So it appears that the dramatic proliferation of candidates under RCV led exhaustion rates in 2021 to be higher than wasted votes in 2017.

In summary, the comparison on the 2017 and 2021 elections does show that RCV is associated with a larger number of candidates in Democratic primaries for the City Council. But many of these additional candidates were not very competitive and served primarily to boost ballot exhaustion and non-majority winners. At the same time, RCV tabulations proved pivotal in very few elections – and those involved large numbers of candidates and high exhaustion rates.

3.1 Race, Ethnicity, and Exhaustion

As demonstrated in the last section, the evidence is consistent with the idea that RCV (at least as implemented in New York City) entails a trade-off of more candidates at the cost of more non-majority winners and high rates of ballot exhaustion. Such a trade-off might be deemed acceptable if the negative consequences were born uniformly across all demographic groups. But given previous findings suggesting that racial and ethnic minorities may be more prone to ballot exhaustion, I now examine whether ballot exhaustion rates were higher in electoral districts with higher concentrations of minority voters.[16]

Ideally, one would like to have individual data on ballot exhaustion linked to the racial, ethnic, and other characteristics of the voter as this would allow us to ask whether certain

[15] See Figure 5 and Table 8.

[16] The existence of such racial and ethnic disparities might be grounds for challenging RCV on equal protection grounds (see Bryer (2021)).

types of voters are more likely to truncate their ballot in ways that lead to exhaustion. Unfortunately, although individual cast vote records (CVR) are available, they cannot be linked to individual demographic data for privacy reasons. Thus, scholars are forced to use aggregated data on demographics and make ecological inferences about their relation to vote choice. Of course, ecological inferences face several challenges. Ecological models may be prone to omitted variable bias if neighborhood composition is correlated with unobserved factors that correlate with vote choice. A similar problem may arise to the extent to which the ethnic/racial composition directly effects vote choice. For example, suppose we observed that electoral districts with large Asian populations had large numbers of exhausted ballots. This pattern could arise in two ways – Asian voters could be more likely to cast truncated ballots or other groups who live in proximity to Asians might truncate ballots more frequently. Another common issue is that local demographic information may not distinguish between voters and non-voters.

While these concerns are impossible to address completely, the use of the NYC voter file can ameliorate them to some extent. From information provided by the commercial data company L2, I am able to estimate the aggregate racial and ethnic characteristics of the participants in the 2021 primary at the level of the electoral district. Given that electoral districts are quite small and that there is substantial residential segregation, the ecological biases should be reduced relative to the use of larger and more diverse population units.[17] Over the 5633 electoral districts in my data, the average number of 2021 primary voters is 180. There are very few districts with more than 400 (only 118 or 2.1%).[18]

Of course, the low level of aggregation and the use of the demographics of the actual

[17]There are slight differences between the data from voter file and the cast vote records which I discuss in the appendix. For example, the raw NYC voter file of 2021 primary voters contains 948,340 records whereas the cast vote record file contains 951,444 votes. At the electoral district level, there are some discrepancies between the voter file totals and the number of cast votes for very small districts. Presumably, these are the consequence of the NYC Board of Elections pooling the tabulation of some smaller districts. The results I present below are unaffected by the exclusion of such districts.

[18]See Appendix Table 7 for the distribution of primary voters across districts.

primary voters does not completely eliminate concerns about ecological biases. But those measures in addition to the robustness of the results across a number of elections and ethnic groups lead some credence to the idea that the findings can be attributed to individual-level behavior.

The models that I report below are based on the following variables:

- *Ballot Exhaustion Rate.* This measure is computed directly from the cast vote record file. After processing the data to account for NYC rules for legal ballots, I determine whether or not a voter cast a ballot ranking one of the two final candidates in a multi-round election.Those who did not cast such a ballot are coded as exhausted and the rate is calculated as the ratio of exhausted ballots to legal ballots in the electoral district. This rate is multiplied by 100 for ease of interpretation.

- *Average Number of Ranks* and *Rate of Single-Rank Ballots.* Using the CVR file, I compute the average number of ranks used by voters in each district along with the proportion of voters who rank only a single candidate. The proportion of single-rank ballots is multiplied by 100 for ease of presentation.

- *Voter Race and Ethnicity.* Data on voter race and ethnicity is provided by L2 and based on a proprietary model that estimates the likelihood of racial and ethnic identities of individual voters from surname and geographical location.[19] The available categories are White, African-American, Hispanic (including Portuguese), Asian (East and South), and Other. Within the Other category, L2 identifies several ethnic or nationality groups. The largest are Arab, Russian, Pakistani, Persian, and Filipino. Although it might make sense to treat the Other category as a combination of ethnic minority groups, I will not emphasize those results given the heterogeneity of the

[19]In future iterations of this paper, I hope to replace the L2 data with that computed from open source models.

classification. Some voters are not classified when the model does not generate a clear prediction. I label these "unknown".

- *Candidate Race and Ethnicity.* Using web searches, I categorized the racial and ethnic identity all of the RCV finalists. The categories include White, Black, Asian, and Hispanic. In may cases, the candidate stress multiracial identities such as Afro-Latino. In such cases, I categorized the candidate as both Black and Hispanic.

- *Number of Candidates.* This data is generated from the certified election reports available form the NYC Board of Elections website.

The results I present are multiple regression models of exhaustion rates (or average votes or single rank ballots) on the shares of each racial and ethnic group in the primary electorate of each voting district. The base category is the share of White voters so that each coefficient represents the increase or decrease in exhaustion relative to 100% White electorates. In all cases, the models include borough fixed effects and robust standard errors.

Table 3 reports the results of the baseline specification for the city- and borough-wide elections.[20]. First, consider column 1 which reports the results from the mayor's race. Here we find that the concentration of all ethnic groups other than Blacks increased the district exhaustion rate substantially. For example, every ten percentage point increase in the Asian population increased the exhaustion rate by about four points. This is rather large effect given that the average exhaustion rate was only 14 points. A similar ten point increase in Hispanic voters is associated with a 1.5 point increase in the exhaustion rate. The Other electorate is also consistently associated with a substantial increase in the exhaustion rate. The only non-White group associated with lower exhaustion in the

[20]Because the Pubic Advocate's race was resolved in the first round, there were technically no exhausted votes. But I include it for comparison purposes and define exhaustion as not voting for one of the top two candidates

mayor's race was African-Americans. But this is largely a function of high-levels of Black support for Eric Adams, the African-American candidate who ultimately won. Clearly, any voter who ranked Adams first could not exhaust her ballot. In the comptroller's race and the combination of borough presidencies (columns 2 and 3), the percentage of Black voters in an electoral district did correlate strongly with ballot exhaustion. Moreover, the findings about Asian and Hispanic electorates is repeated. The findings for Public Advocate replicate those of Mayor – higher exhaustion rates in Asian and Hispanic areas but no effect of the concentration of Black voters, presumably in part because an African-American candidate, Jumaane Williams, was declared the winner in the first round of tabulation.

Table 3: Exhaustion

	Mayor	Boro Pres	Comptroller	Advocate
Black	-0.040***	0.254***	0.151***	0.001
	(0.004)	(0.011)	(0.008)	(0.001)
Asian	0.385***	0.185***	0.446***	0.044***
	(0.009)	(0.012)	(0.013)	(0.003)
Hisp	0.155***	0.207***	0.296***	0.116***
	(0.006)	(0.013)	(0.011)	(0.003)
Other	0.235***	0.380***	0.382***	0.087**
	(0.022)	(0.028)	(0.021)	(0.028)
Unkown	-0.170***	0.270***	0.430***	0.012*
	(0.012)	(0.036)	(0.033)	(0.006)
N	5620.000	5620.000	5620.000	5620.000
R-Squared	0.652	0.572	0.419	0.510

Standard errors in parentheses

Regression models with borough fixed effects

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As noted above, the conventional measurement of exhaustion is limited in that any ballot with a first-place rank for one of the top two candidates cannot, by definition, be

exhausted. Thus, the measure conflates a group's support for one of the top candidates with its members' willingness to take full advantage of the RCV ballot. To help isolate these distinct factors, Table 4 repeats the analysis with a measure I call "adjusted" exhaustion. This measure is a calculation of the exhaustion rate for those voters who do not give the highest ranking to one of the two leading candidates. For example, in the Mayor's election, it is the percentage of exhausted ballots among those who did not rank Eric Adams or Kathryn Garcia first. Specifically, the adjusted exhaustion measure helps to determine whether the lower exhaustion rate in Black districts reported in Table 3 is a result of higher support for Adams in those districts. The results shown in Table 4 generally confirm this possibility.[21] Among voters who did not rank Adams or Garcia first, the exhaustion rates correlate strongly with the concentration of Black voters. The other results mirror those of Table 3 except the comptroller's race where the adjusted exhaustion rate is lower in Black electoral districts.

To briefly summarize, the results are very consistent with high exhaustion rates in Asian, Hispanic, and Other electoral districts. The results regarding Black electorates are contingent on whether there is a Black candidate among the top two vote-getters. In races such as the mayoral and advocate contests with Black finalists, Black districts exhibited slightly lower exhaustion rates than White districts. But in other races, where Black candidates were not finalists, Black districts exhibited higher rates of ballot exhaustion.

The appendix reports on three additional analyses designed to explore the underlying behavior behind the higher exhaustion rates in heavily minority primary electorates. Table 9 repeats the analysis but focuses instead on the number of ranks used by voters in primary electorates of different compositions. I find that heavy concentrations of Asian and Hispanic voters reduces the average number of ranks used by voters relative to White districts in all elections except for the lopsided Advocate's race. The pattern for Black

[21] I do not include the Advocate's race because the adjusted exhaustion rate is very high in every district.

Table 4: Adjusted Exhaustion

	Mayor	Boro Pres	Comptroller
Black	0.047***	0.133***	-0.042***
	(0.006)	(0.010)	(0.009)
Asian	0.403***	0.064***	0.183***
	(0.010)	(0.015)	(0.014)
Hisp	0.260***	0.126***	0.059***
	(0.009)	(0.012)	(0.012)
Other	0.366***	0.311***	0.222***
	(0.022)	(0.027)	(0.018)
Unkown	-0.173***	0.003	-0.021
	(0.018)	(0.033)	(0.038)
N	5608.000	5597.000	5605.000
R-Squared	0.525	0.587	0.215

Standard errors in parentheses

Regression models with borough fixed effects

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

electorates is somewhat different – fewer ranks in the Mayor's race and slightly more in the others. While one would not want to overinterpret these results, this pattern may be consistent with English-language proficiency playing an important role.

A second analysis reported in Table 10 looks at the proportion of voters in each district that cast a ballot ranking only a single candidate. Here the results are also mixed. In the Mayor's race, concentrations of racial and ethnic voters are associated with a strong increase in the number of voters choosing only a single candidate. However, this is not true about Black electorates in the other races where Black electorates voted for a single candidates at rates similar to those of White electorates (again the lopsided Advocate's race stands out as an anomaly). Table 11 examines the effect of the NYC's limit of five candidate rankings per ballot. For the elections that required multiple rounds of tabulation, I estimate two models. The first is based on those voters who fully participated in the election by casting

the minimum of 5 or $n-1$ ranks in a n candidate election.[22] The second model is based on the exhaustion of those who truncated their ballot to a degree not required by the ballot design (less than the minimum of 5 or $n-1$). The correlations of the minority voter percentages and exhaustion rates are statistically significant and have the same sign for both groups of voters. However, the magnitudes are far larger for the voters who voluntarily truncated by ranking fewer than five candidates. These results suggest that NYC's RCV primary would have had substantial racial and ethnic disparities in exhaustion even if the ballot had allowed voters to rank more candidates.

3.2 City Council Elections

In this section, I extend the analysis of the correlates of exhaustion to the 32 City Council primaries that were resolved though multiple-round tabulations. This analysis allows me to better control for additional factors such as the total number of candidates in a council district as well as the racial and ethnic identities of the finalists. Table 5 reports these results. Column 1 uses a similar specification as the one for the executive elections, but controls for the number of candidates. Not surprisingly, given the discussion above, the number of candidates strongly correlates with ballot exhaustion. Each individual candidate is associated with almost a two percentage point increase in the exhaustion rate. But more importantly, districts with large racial and ethnic minority populations have considerably higher rates of ballot exhaustion.

The second column conditions on the race and ethnicity of the final two candidates. The model includes both the unconditional effect of the candidate's identity as well as an interaction between the candidate's identity and the concentration of co-racial/ethnic voters in each district. The unconditional effect allows exhaustion to go up or down in each district independent of its composition, and the interaction effect allows for the possibility

[22] Voting for $n-1$ of n ensures that one's ballot cannot be exhausted.

that voters are less likely to exhaust if there is a co-ethnic finalist.

The unconditional effects show that the identity of the finalists has a substantial impact on exhaustion rates. The presence of a Black finalist is associated with an exhaustion rate five points greater than a contest with two White candidates. Asian candidates are associated with a boost of 2.6 points while Hispanic candidates coincide with a 3 point reduction. All three interaction effects are negative and statistically significant. This finding is consistent with the idea that voters are less likely to exhaust when there is a co-ethnic/racial candidate in the final round.

When I combine the coefficients on the percentage of each group with the associated interaction effect, the effect of percentage Black on ballot exhaustion in the presence of a Black finalist remains negative but is not statistically significant. However, the effect of percent Asian and Hispanic are statistically significant at the .1% in the presence of a co-ethnic finalist.[23] The coefficients for the multi-language groups are larger than that of Blacks, suggesting that ballot complexity may be a contributing factor.

To illustrate the magnitudes of these relationships, Figure 3 presents the predicted differences in the exhaustion rates between hypothetical homogeneous minority districts and those of 100% White districts. In the cases where there is no co-ethnic finalist, the figure shows that homogeneous Black, Asian, and Hispanic districts would have 12 to 20 points higher exhaustion rates than a homogeneous White district (holding the number of candidates and the borough constant). When there are co-ethnic finalists, the exhaustion rates in homogeneous Asian and Hispanic districts remain 6 to 8 percentage points higher, but the rates in Black districts are indistinguishable from White districts.

Column three presents a different model where I condition the effects of racial composition on the number of candidates. These interactions of the district composition for all three groups are broadly similar. For the minimum number of candidate in RCV tabulated

[23]The estimated condition effect for Percent Asian is .067 with a standard error of .017. For Percent Hispanic, it is .084 with a standard error of .018.

Table 5: Exhaustion in Council Primaries

	Baseline	Candidate Demographics	Number of Candidates
# of Candidates	1.924***	1.865***	0.984***
	(0.056)	(0.054)	(0.152)
% Black	0.035**	0.174***	-0.027
	(0.012)	(0.018)	(0.018)
% Asian	0.080***	0.190***	-0.165***
	(0.016)	(0.031)	(0.046)
% Hispanic	0.076***	0.131***	-0.154***
	(0.016)	(0.022)	(0.040)
% Other	0.371***	0.336***	0.359***
	(0.051)	(0.055)	(0.051)
% Unknown	0.061	0.091	0.050
	(0.055)	(0.055)	(0.054)
Black Cand in Final Rnd		5.304***	
		(0.657)	
Black Cand x % Black		-0.185***	
		(0.016)	
Asian Cand in Final Rnd		1.672**	
		(0.611)	
Asian Cand x % Asian		-0.122***	
		(0.031)	
Hispanic Cand in Final Rnd		-2.990***	
		(0.637)	
Hispanic Cand x % Hispanic		-0.047*	
		(0.022)	
# of Candidates × % Black			0.008***
			(0.002)
# of Candidates × % Asian			0.033***
			(0.007)
# of Candidates × % Hispanic			0.029***
			(0.005)
N	3552.000	3552.000	3552.000
R-Squared	0.376	0.429	0.387

Standard errors in parentheses
Regression models with borough fixed effects
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

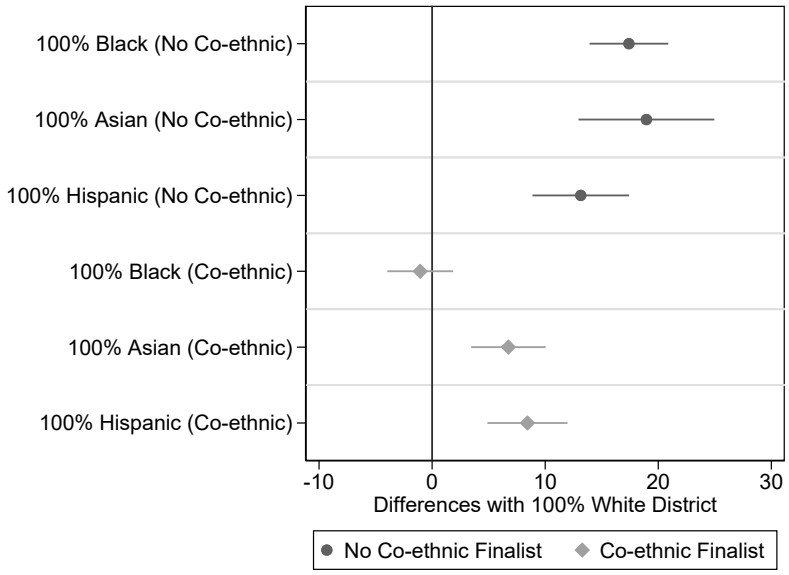


Figure 3: **Predicted Exhaustion Rate Differences with 100% White District** Figure includes those races which required multiple rounds of tabulation.

elections (3), there is very little difference across districts based on ethnic composition. But as the number of candidates gets larger, there is substantial variation related to composition. Figure 4 illustrates the magnitudes of the racial and ethnic composition coefficients as a function of the number of candidates appearing on the ballot. The effect of the number of candidates on the magnitude of difference between 100% White districts is especially large for Asian and Hispanic districts. Such a pattern is consistent with minority voters being disadvantaged by the candidate proliferation of RCV much more than White voters.

The data on City Council races allows me to test an additional claim about RCV – that it boosts voter engagement. If this claim were true, we would expect to see less voter roll-off between the higher-profile executive races and the down-ballot council races. However, since previous research has shown that ballot completion is less likely when voters have less information and sophistication (Lamb and Perry 2020), one might expect RCV to exacerbate roll-off given the increased informational demands required to rank multiple

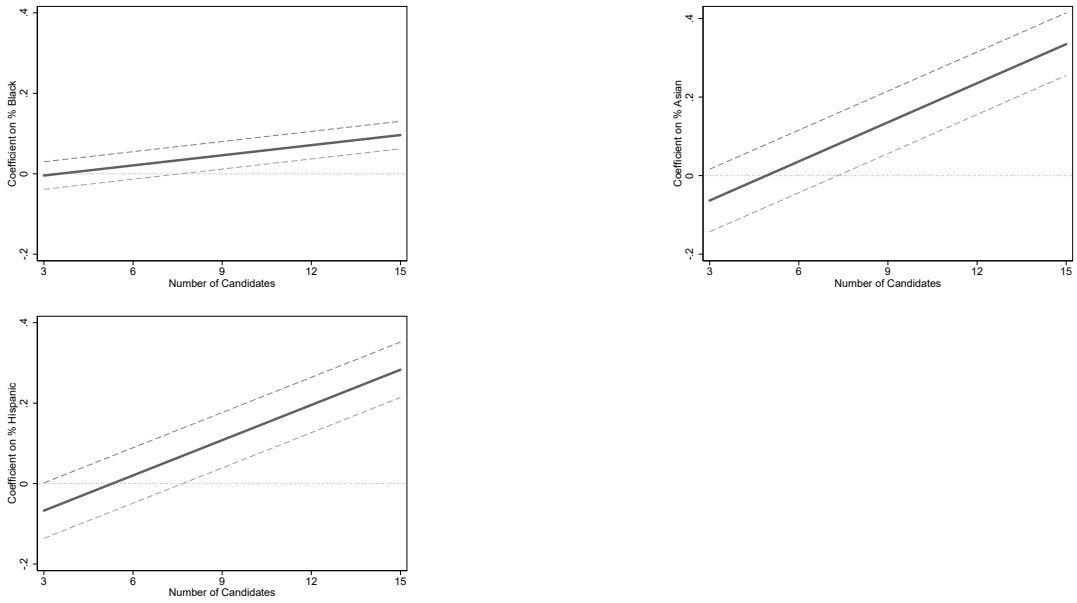


Figure 4: Coefficients on Racial and Ethnic Composition and % of Candidates

candidates.[24]

The data are much more consistent with the latter perspective as we observe very high roll-off rates in the council races. I find that 9.3% of the voters who voted in the mayor's race failed to cast a vote in one of the 32 RCV tabulated council races. This is much higher than the 5.7% of 2017 voters who skipped voting in a contested council primary.[25] This gap is consistent with the voters being deterred by the use of RCV in the lower profile elections. But for my purposes, it is important to know whether rates of roll-off

[24]The question of roll-off is distinct from whether RCV induces more voters to show up at the polls in the first place. McDaniel (2016) finds that turnout dropped in San Francisco mayoral elections following the adoption of RCV, especially among minority groups. In a study of several RCV cities matched against comparable plurality cities, Kimball and Anthony (2016) find a four percentage point drop in turnout associated with RCV, although the estimate is not statistically significant on its own. In a more recent study, McDaniel (2019) finds a statistically significant five percentage point drop due to the introduction of RCV in municipal elections relative to similar cities that maintain plurality electoral systems. While there is disagreement about the magnitude and statistical reliability of the estimated declines in voter turnout, I am not aware of any study that finds a boost in turnout associated with switching to RCV from plurality voting.

[25]One might object that that these numbers are not strictly comparable because some voters may have skipped voting in the 2017 mayor's election and then voted in a council race. But given the low number of voters skipping the mayor's race, such voters would have a very small effect on the comparison.

varied significantly across electoral districts based on their racial and ethnic composition. So Table 12 in the Appendix reports a model of ballot roll-off similar to those reported above. The results show that ballot roll-off rates were higher in electoral districts with larger Black, Asian, and Hispanic populations. As with exhaustion rates, roll-off rates are attenuated in the presence of co-ethnic finalists. The conditional effects remain positive for Black and Hispanic populations, but roll-off rates in Asian districts are slightly smaller when there is a competitive Asian candidate on the ballot.[26]

In summary, the evidence shows that ballot exhaustion was endemic in the NYC Council primaries. Rates were especially high in elections with large numbers of candidates despite the fact that the vast majority of the incremental candidates were not at all competitive. The findings are also consistent with large gaps in the ballot exhaustion rates across ethnic and racial groups, especially groups with large numbers of non-native English speakers. The gaps were partially attenuated when co-ethnic candidates were strong enough to advance to the final round. Given Colner (2023)'s finding that the boost to the diversity pool associated with the adoption of RCV is modest and short-lived, the findings about co-ethnic candidates may portend greater problems for RCV in the future.

4 Alaska Top Four Primary and RCV General

To explore the generality of the findings from New York City, I now examine a very different context – the 2022 Alaska state and federal elections. In 2020, the voters of Alaska adopted Measure 2 which replaced their existing electoral system of first-past-the-post (FPTP)

[26]These observational results can be usefully contrasted with recent experimental results. In Ntounias (2023), respondents are assigned to vote in a hypothetical RCV election while a control group votes in a plurality election with the same candidates. He finds that RCV voters are no more likely to search for candidate information (i.e. read candidate bios) and are equally likely to abstain. Thus, the opportunity to rank more candidates had no important impact on voter engagement. Experimental evidence from international settings reported by Blais et al. (2021) also confirms that ranked choice does not impact voter satisfaction.

partisan primaries followed by FPTP general elections with a two-stage process where the top four candidates from a "pick one" open primary compete in a general election conducted under RCV rules. The measure passed narrowly with a margin of less than 4000 votes of the roughly 344,000 valid ballots cast.[27]

Following the passage of Measure 2, Alaska implemented its Top Four system for the first time in 2022. The primary stage of these elections was almost completely inconsequential. While the top races did involve large numbers of candidates (US Senate 19, US Rep 22, and Governor 10), only one of the 59 state legislative primaries had more than four candidates (HD 35 which had 5). Even with the large number of candidates, the top of the ticket primaries were almost as meaningless. The fourth place candidates polled 2.13% in the Senate race, 3.77% in House race, and 3.86% in the governor's race. On average, they trailed the leading candidates by over 35 points, but only beat the fifth place candidate by about two points. In the general election, the fourth candidates tallied a mere 3% of the vote in the first round. Given the trivial outcomes of the primaries, I focus on the role of RCV and ballot exhaustion in the general elections.

Table 6 reports the rates of ballot exhaustion in the 2022 Alaska elections. The table reports exhaustion rates both for elections that involved RCV calculations as well as "potential rates" for elections that were resolved in the first round. Across all elections, the data show that around 1 of 20 Alaskan voters who went to the polls had no vote recorded in the last round of tabulation. While these rates are somewhat lower than those in NYC, it is worth noting that there were many fewer candidates in Alaska's Top 4 setting. But of course, it is clear that the four candidate limitation did not eliminate high rates of exhaustion. Moreover, the rates of exhaustion in Alaska generally exceed those in similar RCV elections in Maine (see McCarty (2020).)

[27]Brooks, James (November 18, 2020). "Alaska becomes second state to approve ranked-choice voting as Ballot Measure 2 passes by 1%". Anchorage Daily News. Retrieved December 6, 2022. Hillman, Anne (September 15, 2022) "Why Alaska uses ranked choice voting and what we know about how it affects elections". Alaska Public Radio, retrieved March 6, 2023.

Table 6: Exhausted Ballots in Alaska Elections

Election	**% Exhausted**
House Special	6.0%
House General	5.5%
Senate	3.4%
Governor (potential)	6.1%
State Senate	4.9%
State Senate (potential)	7.5%
State House	3.7%
State House (potential)	6.5%
State House (four candidates)	4.8%

Potential exhaustion rates include those voters whose ballots would have been exhausted had the election proceeded to RCV tabulation

As I discussed in the context of New York City, high exhaustion rates might arguably be acceptable if voters from across all racial, ethnic, and social groups were roughly equally likely to exhaust their ballots. So the main question is whether or not certain groups of Alaskans are more or less likely to exhaust their ballots. Therefore, as I did for NYC, I conduct a multivariate regression analysis of the correlates of ballot exhaustion. The primary dependent variable is the ballot exhaustion rate at the precinct level. Using CVR data provided by the State of Alaska Division of Elections, I was able to determine whether each ballot in the cast vote record file was exhausted in a given race.[28] I then aggregate these data to the precinct level. I use two versions of this dependent variable. The first, labeled "raw," is the total rate of exhausted ballots in a precinct for a given election. The problem with this measure, however, is that it might be conflated with partisanship as a voter who ranks one of the final two candidates (generally a major party candidate) first cannot exhaust her ballot regardless of how many candidates she chooses. So as I did for the NYC executive elections, I use a second "adjusted" measure which is the rate of exhaustion among those voters who do not rank one of the final two candidates first. This measure has the advantage of eliminating the effects of ranking a top candidate

[28] See `https://www.elections.alaska.gov/election-results/e/?id=22genr`.

first, but it is noisier because it is based on a much smaller number of voters. Below I report both sets of results. Another issue is that I can only calculate exhaustion rates for elections that use RCV tabulations. Therefore, I used "potential" exhaustion in the governor's race and state legislative districts with more than two candidates. This measure is based on a determination of whether the voter's ballot would have been exhausted had the leading candidate failed to reach 50%. Precincts in state legislative districts with only two candidates cannot be included in the analysis.

Unfortunately, the L2 data file does not contain reliable data on race and ethnicity in Alaska, so I must aggregate census block and block group data to the precinct level.[29] From the Census data, I compile racial and ethnic shares of Whites, Blacks, Asians, Hispanics, Alaskan Natives, and Other.[30] The use of Census data has limitations. The level of aggregation is higher, and the measures are based on the full population rather than voters. But the estimated relationships may still be informative especially in light of the findings with higher quality data in NYC. To help offset some of these concerns, I include additional demographic data on education and age. I include education variables for less than high school degree, high school degree, some college, and college graduate. I also calculate the share of precinct residents over the age of 65.

Finally, it is worth noting that Alaska presents a fairly difficult case for detecting racial and ethnic differences in ballot exhaustion. Since the Top 4 system serves to limit the number of candidates on the RCV ballot, Alaska is unlikely to produce the large cross-group variations we saw in NYC with its larger number of candidates. Yet the results presented below do provide compelling evidence of ethnic group differences even in elections with a lower number of candidates.

[29]This problem largely stems from the historical surname adoption practices of Alaskan Natives. See `https://namecensus.com/last-names/common-american-indian-and-alaskan-native-surnames/`.

[30]The data on Alaskan Natives is based on the Census classification American Indian/Alaskan Native. For simplicity, I refer to the group simply as Alaskan Natives, conceding that a small share of this group may consist of members of non-Alaskan tribal groups.

My main analyses are regressions of the exhaustion rates on the racial, educational, and age variables. In the models of state house elections, I also include the number of candidates in the election (this is a constant in all of the other cases including state senate elections, none of which had more than three candidates). My analysis did not uncover any systematic correlations between education levels and racial demographics other than Alaskan Native. However, I found that the percentage of Alaskan Natives was consistently highly correlated with exhaustion rates across electoral contexts. Tables 13–18, found in the appendix, present these findings in full.

Table 7 presents the full set of coefficients on the share of Alaskan Natives in a precinct across all of the elections. Panel 1 reports the estimates for the special US House election held in July of 2022. In this election, Mary Peltola, an Alaskan Native, won a four-way race against three Republican candidates including former Vice-Presidential candidate Sarah Palin and Nick Begich III, a member of a prominent political family. Not surprisingly, given Peltola's co-ethnicity, there is no correlation between the Alaskan Native share and the exhaustion rate. However, the exhaustion rates of those ranking Begich first were high and somewhat concentrated in Alaskan Native precincts, although the coefficient is only significant at the $p < .10$ level. One might argue that the success of an Alaskan Native candidate rebuts the idea that RCV is bad for minority-group voters. But the pattern of voting on the RCV ballots indicate that the outcome would likely have been the same under the prior system of a partisan primary followed by a general election.[31]

Panel 2 reports the findings from the House general election in November of 2022. This election was generally a replay of the special election.[32]. The pattern of exhaustion is just a clearer version of what happened in the special election. In the general election, Alaskan Native support for Peltola was strong enough to reduce the exhaustion rate for their

[31] Assuming RCV rankings are indicative of how voters would have voted in primary and general elections, Palin would have clearly received the GOP nomination and lost to Peltola head-to-head in the general.

[32] The main difference was that the fourth place candidate dropped out of the race, but still appeared on the ballot

Table 7: Coefficients on Alaska Native Population

	Exhaustion	Exhaustion Adj
Special House Election	0.007	0.052
	(0.009)	(0.027)
N	369	369
R^2	0.068	0.116
House General Election	-0.031***	0.205***
	(0.008)	(0.029)
N	374	370
R^2	0.186	0.312
Governor	0.125***	0.181***
	(0.012)	(0.028)
N	374	372
R^2	0.435	0.409
US Senate	0.013*	0.033
	(0.005)	(0.033)
N	374	369
R^2	0.128	0.156
State Senate	0.076*	0.156
	(0.036)	(0.092)
N	141	141
R^2	0.139	0.150
State House	0.258	1.117*
	(0.168)	(0.518)
N	91	91
R^2	0.316	0.288

Models include shares of other racial and ethnic groups, senior citizens and educational attainment groups.
Potential exhaustion rates used for Governor and state legislatures.
State house model controls for number of candidates.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

precincts, but the exhaustion rate for those who ranked Begich first are heavily concentrated in Alaskan Native areas. The correlation is highly significant.

Panel 3 reports on the Governor's race and is based on potential exhaustion since the winner, Michael Dunleavy obtained 50.2% of the first ranks. But had Dunleavy received about 800 fewer voters, 6% of the ballots would have been exhausted (see above). The regression models show again that these exhausted ballots would have again been concentrated in Alaskan Native precincts.

The US Senate race is reported in Panel 4. Despite the fact that this race had the lowest overall exhaustion rate of any of the elections, I still estimate a small but statistically significant relationship between raw exhaustion and the share of Alaskan Native residents.[33]

Panels 5 and 6 mostly replicate the above patterns in State Senate and House elections. Because there were many uncontested and two candidate state legislative races, the models of exhaustion could be estimated using only a fraction of the precincts. To ensure an adequate sample size, I use the potential exhaustion measure for races with three or more candidates that resolved in the first round. Although this loss of statistical power led to a loss of precision in the estimates, the point estimates are substantial and in line with the findings for the other elections.

In summary, despite the fact that the Top Four limited the proliferation of candidates, the results from Alaska are very consistent with the findings from NYC. Across races, there is a statistically significant relationship between ballot exhaustion and the share of the population belonging to a politically-salient minority. Also similar to NYC, the outcomes of the US House election suggest that these relationships may be mitigated when there are strong co-ethnic candidates.

[33]The coefficient on Alaskan Native is not significant in the adjusted exhaustion model largely due to the fact that just slightly more than 10% did not vote for one of the top two candidates. Thus, the adjusted measure is very noisy in this case.

5 Conclusion

Partisan polarization and related political dysfunctions have greatly increased interest in fundamental reforms to our electoral processes. But such reforms often come with a variety of trade-offs and unintended consequences. So careful scrutiny and evaluation of the effects of reforms is crucial.

Ranked choice voting is a reform that has excited a lot of people. Its advocates suggest that it can both turn down the temperature surrounding electoral politics and increase the diversity of choices available to voters. But scholarly attempts to evaluate such claims and to root out any downsides are still in their infancy. In this paper, I try to evaluate one such downside – the high rates of ballot exhaustion and their concentration in precincts with large minority populations. The findings suggest that these are indeed drawbacks of RCV. Across a variety of electoral contexts in New York City and Alaska, I find consistent correlations between the ethnic and racial composition of a precinct and the share of exhausted ballots. These correlations are especially large when there are large numbers of candidates and when there are not strong co-ethnic candidates in the race.

These findings are consistent with RCV providing an advantage to majority-group voters over minority-group voters. Whereas RCV allows majority-group voters an additional opportunity to resolve candidate coordination problems, the patterns of ballot exhaustion suggest that minority-group voters are not taking full advantage the system. Whether those higher rates of exhaustion are due to ballot complexity, lower levels of information and mobilization, or racial and ethnic polarization, it is clear that the potential effects of RCV on minority voters needs to be carefully scrutinized before further adoption.

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6 Appendix

6.1 Comparisons of 2017 and 2021

Column 1 of Table 8 reports regression models of the number of exhausted or wasted voters in contested city council primaries in 2017 and 2021. Note that while the direct effect of RCV elections in 2021 is not statistically different from zero, the correlation between exhausted and wasted votes with the number of candidates is lower under RCV.

Column 2 of Table 8 reports regression models of the size of the winning majority in contested city council primaries in 2017 and 2021. Here the models suggest that RCV was associated with substantially lower winners' shares, but that RCV may have mitigated the effect of the number of candidates.

Table 8: Comparison of RCV and Plurality

	Exhaust/Waste	Winner's Share
Candidates	6.427***	-5.334***
	(0.658)	(0.921)
RCV (2021)	3.040	-12.119*
	(2.639)	(4.899)
RCV x Candidates	-3.420***	3.375**
	(0.698)	(1.003)
Constant	-9.851***	77.026***
	(2.152)	(3.951)
N	79.000	79.000
R-Squared	0.752	0.475

Standard errors in parentheses
Regression model
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figures 5 and 6 present these results graphically.

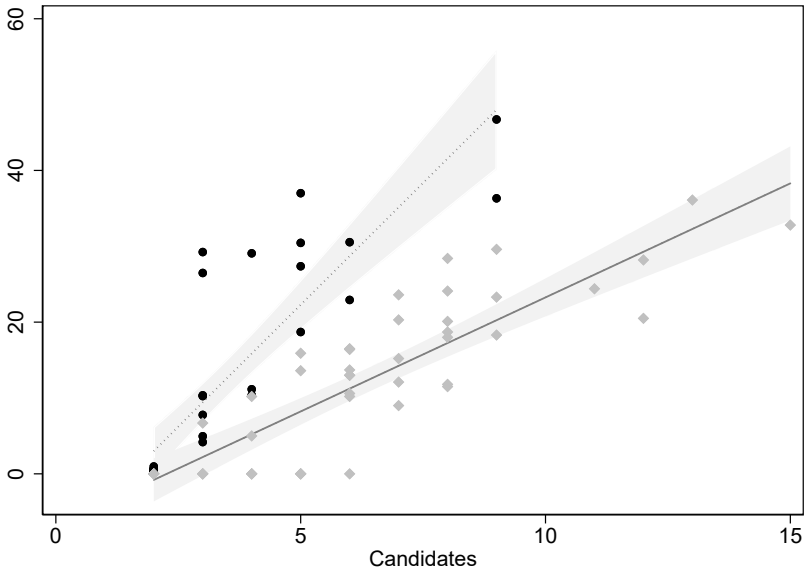


Figure 5: **Exhaustion and Waste Rates by Number of Candidates** Diamonds and solid line represent RCV races in 2021 while circles and dotted line represent plurality contests in 2017.

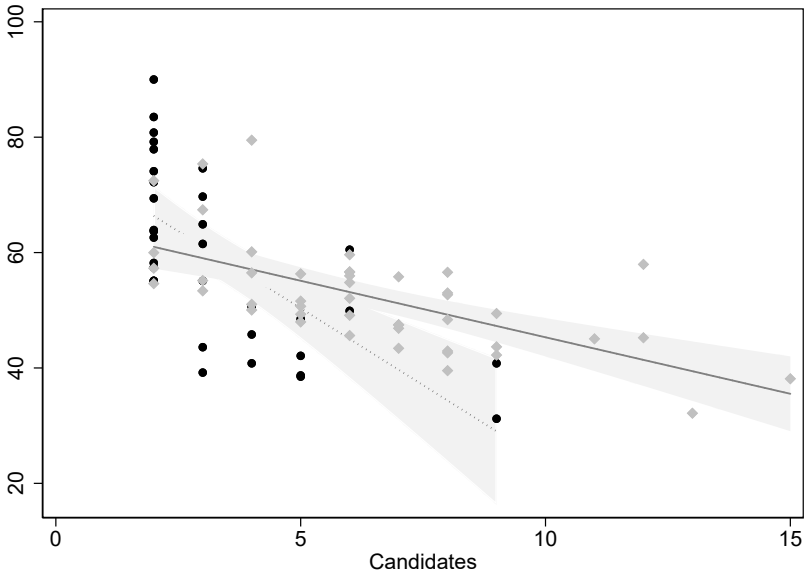


Figure 6: **Winner's Share by Number of Candidates** Diamonds and solid line represent RCV races in 2021 while circles and dotted line represent plurality contests in 2017.

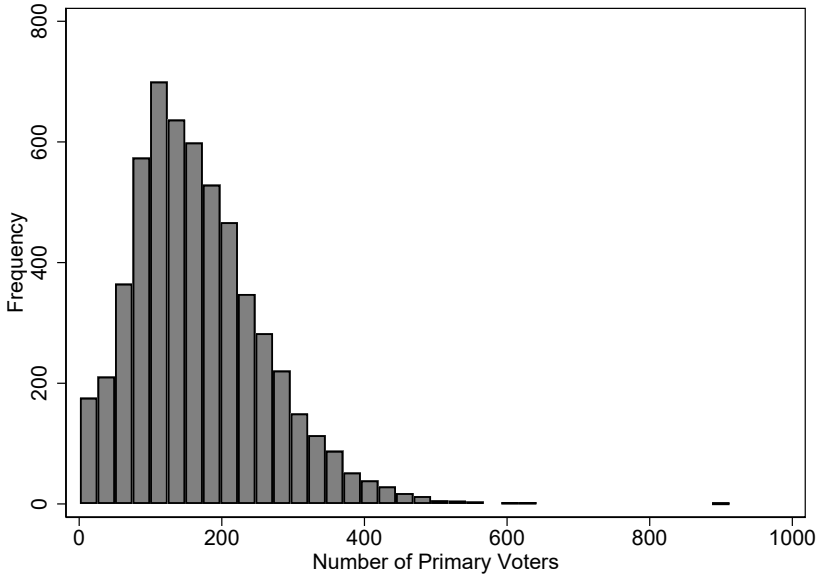


Figure 7: **Number of Primary Voters by District** From NYC Voter File

6.2 Cast Vote Records and the Voter File

Figure 7 shows a histogram of the number of cast vote records for each NYC precinct. Only a handful of precincts had more than 400 voters with most ranging from 100 to 200 voters.

Figure 8 plots the number of records in the CVR with the number of primary voters as recorded in the L2 voter file most proximate to the election. In most cases, the figures closely match. There are some discrepancies which might be attributed to moving or attrition of voters from the voter file soon after the election and/or the NYC Board of Elections combining precincts for tabulation purposes.

6.3 Correlates of the Number of Ranks and the Single Ranks

Table 9 re-estimates the models described in the main text by using the number of ranks used by each voter to construct the dependent variable. All observations are weighted by the number of votes cast in each electoral district. The model contains borough fixed effects, and robust standard errors are reported.

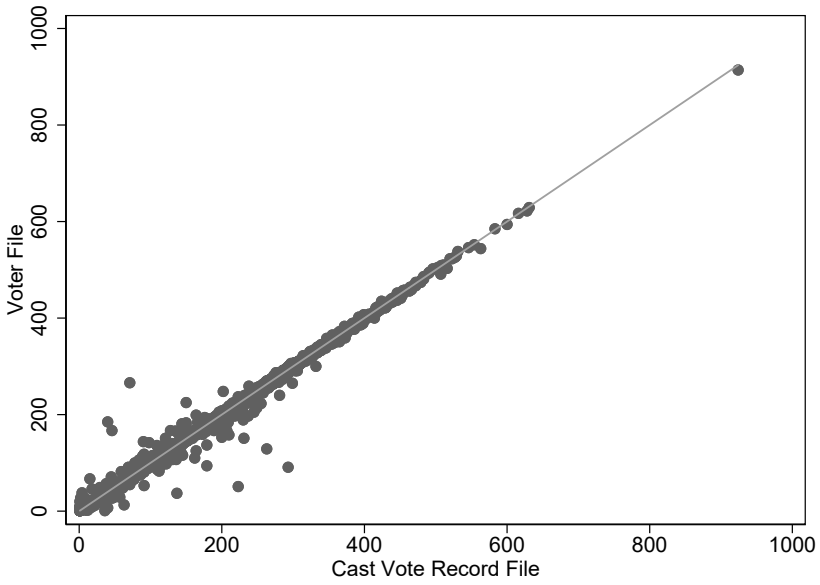


Figure 8: **Number of Records in Voter File versus Cast Vote Records** with 45 degree line

Table 9: Number of Votes

	Mayor	Boro Pres	Comptroller	Advocate
Black	-0.008***	0.001***	0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
Asian	-0.016***	-0.001***	-0.002***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Hisp	-0.014***	0.000	-0.001***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Other	-0.010***	0.002**	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.000)
Unkown	-0.022***	-0.009***	-0.009***	-0.002***
	(0.001)	(0.001)	(0.001)	(0.000)
N	5620.000	5614.000	5619.000	5616.000
R-Squared	0.399	0.757	0.359	0.522

Standard errors in parentheses

Regression models with borough fixed effects

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10 re-estimates the models described in the main text but uses the number of voters who ranked only a single candidate to construct the dependent variable. All observations are weighted by the number of votes cast in each electoral district. The model contains borough fixed effects, and robust standard errors are reported.

Table 10: Single Vote Ballots

	Mayor	Boro Pres	Comptroller	Advocate
Black	0.202***	0.006	-0.010	-0.234***
	(0.006)	(0.006)	(0.006)	(0.007)
Asian	0.319***	0.021	0.061***	-0.396***
	(0.011)	(0.011)	(0.011)	(0.012)
Hisp	0.323***	0.030***	0.082***	-0.349***
	(0.008)	(0.009)	(0.008)	(0.010)
Other	0.270***	-0.018	0.042**	-0.200***
	(0.017)	(0.014)	(0.014)	(0.017)
Unkown	0.181***	-0.106***	-0.052*	-0.640***
	(0.021)	(0.021)	(0.024)	(0.032)
N	5620.000	5620.000	5620.000	5620.000
R-Squared	0.543	0.294	0.153	0.434

Standard errors in parentheses

Regression models with borough fixed effects

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11 reports estimates of separate models distinguishing between the rates at which voters who fully participated exhausted their ballots (F) and the rate at which those who truncated (T) exhausted their ballots.[34] For Asian, Hispanic, and Other electorates, the magnitudes of the coefficients are much higher for voters who voluntarily truncated by not ranking as many candidate as there were allowed. Yet I still find significant correlations between the size of those electorates and exhaustion among those who fully participated in the election.

[34]The number of electoral districts varies due to districts where every voter cast a full ballot or no voter cast a full ballot.

Table 11: By Source of Truncation

	Mayor F	Mayor T	BP F	BP2 T	Comp F	Comp T
Black	-0.031***	-0.066***	0.091***	0.325***	-0.026***	-0.028***
	(0.004)	(0.006)	(0.004)	(0.016)	(0.005)	(0.005)
Asian	0.081***	0.518***	0.028***	0.288***	0.347***	0.425***
	(0.007)	(0.011)	(0.005)	(0.022)	(0.012)	(0.011)
Hisp	0.049***	0.215***	0.032***	0.345***	0.112***	0.207***
	(0.005)	(0.009)	(0.005)	(0.019)	(0.007)	(0.008)
Other	0.080***	0.351***	0.082***	0.580***	0.118***	0.332***
	(0.014)	(0.027)	(0.011)	(0.042)	(0.017)	(0.027)
Unkown	-0.093***	-0.322***	-0.011	0.219***	-0.065***	-0.196***
	(0.013)	(0.017)	(0.012)	(0.047)	(0.015)	(0.015)
N	5598.000	5602.000	5605.000	5596.000	5585.000	5610.000
R-Squared	0.221	0.649	0.644	0.429	0.477	0.621

Standard errors in parentheses

Regression models with borough fixed effects

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6.4 Ballot Roll-Off

Table 12 presents the estimates of a model of ballot roll-off in NYC precincts as a function of the number of city council candidates and the racial and ethnic composition of each electoral district. All observations are weighted by the number of votes cast in each district. The model contains borough fixed effects, and robust standard errors are reported.

Table 12: Ballot Roll-Off between Mayor and Council Primaries

	Baseline	Candidate Demographics
# of Candidates	-0.310***	-0.275***
	(0.032)	(0.030)
% Black	0.019***	0.049***
	(0.004)	(0.008)
% Asian	0.012	0.140***
	(0.007)	(0.015)
% Hispanic	0.039***	0.084***
	(0.007)	(0.010)
% Unknown	0.072***	0.052***
	(0.015)	(0.015)
% Other	-0.001	-0.032**
	(0.013)	(0.010)
Black Cand in Final Rnd		-1.229***
		(0.243)
Black Cand x % Black		-0.022**
		(0.008)
Asian Cand in Final Rnd		1.337***
		(0.265)
Asian Cand x % Asian		-0.178***
		(0.015)
Hispanic Cand in Final Rnd		-2.376***
		(0.329)
Hispanic Cand x % Hispanic		-0.013
		(0.012)
N	3552.000	3552.000
R-Squared	0.168	0.260

Standard errors in parentheses

Regression models with borough fixed effects

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6.5 Alaska Models

Tables 13–18 provide estimates of the full specifications for the models of ballot exhaustion in the 2022 Alaskan elections. In each case, the observations are weighted by the number of voters who cast ballots in the precinct. Each model reports robust standard errors. In some cases, the number of precincts used for the adjusted exhaustion model is lower than the number in the raw exhaustion model. This occurs when there are precincts where all voters ranked one of the top two candidates first.

Table 13: Special House Election

	Exhaustion	Exhaustion Adj
Black	-0.158*	-0.384**
	(0.064)	(0.116)
Hisp	0.018	-0.130
	(0.099)	(0.191)
American Indian/Alaska Native	0.007	0.052
	(0.009)	(0.027)
Asian	0.002	0.032
	(0.028)	(0.050)
Less than HS	0.015	0.013
	(0.029)	(0.067)
High School	0.005	0.032
	(0.012)	(0.025)
Some College	0.035	0.081*
	(0.019)	(0.037)
Over 65	0.030	0.100*
	(0.019)	(0.047)
N	369.000	369.000
R-Squared	0.068	0.116

Standard errors in parentheses

Regression models

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 14: General House Election

	Exhaustion	Exhaustion Adj
Black	-0.201***	-0.611***
	(0.060)	(0.150)
Hisp	-0.070	-0.114
	(0.093)	(0.232)
American Indian/Alaska Native	-0.031***	0.205***
	(0.008)	(0.029)
Asian	5.785*	35.266***
	(2.689)	(7.073)
Less than HS	0.046	0.172*
	(0.025)	(0.080)
High School	0.010	-0.010
	(0.013)	(0.037)
Some College	0.048**	0.071
	(0.016)	(0.041)
Over 65	0.056**	0.232***
	(0.018)	(0.045)
N	374.000	370.000
R-Squared	0.186	0.312

Standard errors in parentheses

Regression models

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 15: Governor Election

	Exhaustion	Exhaustion Adj
Black	-0.322***	-0.559**
	(0.069)	(0.186)
Hisp	-0.007	-0.209
	(0.092)	(0.242)
American Indian/Alaska Native	0.125***	0.181***
	(0.012)	(0.028)
Asian	0.141***	0.225**
	(0.027)	(0.080)
Less than HS	-0.010	0.134
	(0.031)	(0.080)
High School	-0.026	0.182***
	(0.014)	(0.032)
Some College	0.031	0.190***
	(0.020)	(0.043)
Over 65	0.110***	0.201***
	(0.024)	(0.053)
N	374.000	372.000
R-Squared	0.435	0.409

Standard errors in parentheses

Regression models

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 16: Senate Election

	Exhaustion	Exhaustion Adj
Black	0.048	-0.378*
	(0.038)	(0.175)
Hisp	0.054	-0.143
	(0.057)	(0.288)
American Indian/Alaska Native	0.013*	0.033
	(0.005)	(0.033)
Asian	0.018	0.147
	(0.016)	(0.091)
Less than HS	0.041*	0.191*
	(0.019)	(0.097)
High School	0.020*	0.155***
	(0.009)	(0.043)
Some College	0.030**	0.216***
	(0.010)	(0.058)
Over 65	0.018	0.165*
	(0.013)	(0.066)
N	374.000	373.000
R-Squared	0.128	0.156

Standard errors in parentheses

Regression models

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 17: State Senate Election: Exhaustion and Vote

	Exhaustion	Exhaustion Adj
Black	-0.344	-1.106
	(0.207)	(0.570)
Hisp	0.533	-0.556
	(0.317)	(0.809)
American Indian/Alaska Native	0.076*	0.156
	(0.036)	(0.092)
Asia	0.029	0.296
	(0.078)	(0.180)
Less than HS	-0.166	-0.021
	(0.122)	(0.334)
High School	-0.033	-0.068
	(0.074)	(0.134)
Some College	-0.195*	-0.278
	(0.081)	(0.163)
Over 65	0.016	0.076
	(0.030)	(0.101)
N	141.000	139.000
R-squared	0.139	0.150

Standard errors in parentheses

Regression models

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 18: State House Election: Exhaustion and Vote

	Exhaustion	Exhaustion Adj
Black	-0.443	-2.877**
	(0.325)	(0.859)
Hisp	0.653	1.057
	(0.448)	(1.118)
American Indian/Alaska Native	0.258	1.117*
	(0.168)	(0.518)
Asian	-0.289**	-0.474
	(0.098)	(0.344)
Less than HS	-0.258*	-0.429
	(0.127)	(0.387)
High School	0.049	0.018
	(0.032)	(0.118)
Some College	0.154**	0.345**
	(0.047)	(0.123)
Over 65	-0.073	0.451
	(0.063)	(0.228)
Candidates	0.035***	-0.032
	(0.009)	(0.024)
N	91.000	91.000
R-Squared	0.316	0.288

Standard errors in parentheses

Regression models

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

RANKED CHOICE VOTING
SAMPLE BALLOT

Ten Round Contest

Rank Six Choices

Candidate 1

Candidate 2

Candidate 3

Candidate 4

Candidate 5

Candidate 6

Candidate 7

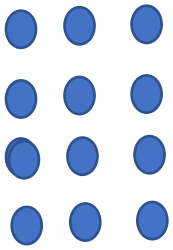
Candidate 8

Candidate 9

Candidate 10

Candidate 11

RANKED CHOICE VOTING
SAMPLE BALLOT



1st Ranked Choice	2nd Ranked Choice	3rd Ranked Choice	4th Ranked Choice	5th Ranked Choice	6th Ranked Choice	CANDIDATE
						Dolphins
						Pelicans
						Sea Turtles
						Sharks
						Seals
						Starfish
						A- Write In
						B – Write In
						C – Write In
						D – Write In
						E – Write In
						F – Write In

RANKED CHOICE VOTING
SAMPLE BALLOT

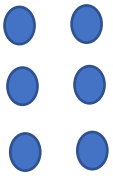
OVERVOTE

Any ballot with more than one candidate indicated for the same ranking.

5TH RANKING

1st Ranked Choice	2nd Ranked Choice	3rd Ranked Choice	4th Ranked Choice	5th Ranked Choice	6th Ranked Choice	CANDIDATE
						Dolphins
						Pelicans
						Sea Turtles
						Sharks
						Seals
						Starfish
						A- Write In
						B – Write In
						C – Write In
						D – Write In
						E – Write In
						F – Write In

RANKED CHOICE VOTING
SAMPLE BALLOT

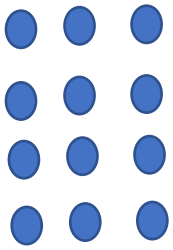


SKIPPED RANKING

A ballot contains a higher ranking with no candidate indicated, and contains a lower ranking with a candidate indicated.

1st Ranked Choice	2nd Ranked Choice	3rd Ranked Choice	4th Ranked Choice	5th Ranked Choice	6th Ranked Choice	CANDIDATE
●						Dolphins
						Pelicans
		●				Sea Turtles
			●			Sharks
				●		Seals
					●	Starfish
						A- Write In
						B – Write In
						C – Write In
						D – Write In
						E – Write In
						F – Write In

RANKED CHOICE VOTING
SAMPLE BALLOT



UNDERVOTE

Any ballot that has no candidates indicated at any ranking.

1st Ranked Choice	2nd Ranked Choice	3rd Ranked Choice	4th Ranked Choice	5th Ranked Choice	6th Ranked Choice	CANDIDATE
						Dolphins
						Pelicans
						Sea Turtles
						Sharks
						Seals
						Starfish
						A- Write In
						B – Write In
						C – Write In
						D – Write In
						E – Write In
						F – Write In