

# Ranked-Choice Voting From a Partisan Perspective

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## Abstract

Ranked-choice voting (RCV) has come to mean a range of electoral systems. Broadly, they can facilitate (a) majority winners in single-seat districts, (b) majority rule with minority representation in multi-seat districts, or (c) majority sweeps in multi-seat districts. Such systems can be combined with other rules that encourage/discourage slate voting. This paper describes five major versions used in U.S. public elections: Alternative Vote (AV), single transferable vote (STV), block-preferential voting (BPV), the bottoms-up system, and AV with numbered posts. It then considers each from the perspective of a ‘political operative.’ Simple models of voting (one with two parties, another with three) draw attention to real-world strategic issues: effects on minority representation, importance of party cues, and reasons for the political operative to care about how voters rank choices. Unsurprisingly, different rules produce different outcomes with the same votes. Specific problems from the operative’s perspective are: majority reversal, serving two masters, and undisciplined third-party voters (e.g., ‘pure’ independents). Some of these stem from well-known phenomena, e.g., ballot exhaustion/ranking truncation and inter-coalition “vote leakage.” The paper also alludes to vote-management tactics, i.e., rationing nominations and ensuring even distributions of first-choice votes. Illustrative examples come from American history and comparative politics. (209 words.)

**Keywords:** Alternative Vote, ballot exhaustion, block-preferential voting, bottoms-up system, exhaustive-preferential system, instant runoff voting, ranked-choice voting, sequential ranked-choice voting, single transferable vote, strategic coordination (10 keywords).

# 1 Introduction

Over the course of the past two decades, various forms of “ranked-choice voting” (RCV) have been adopted around the United States. These include at the local and state levels, with and without partisan elections, and sometimes for party primaries. The RCV landscape has become complicated. This paper tries to clarify it.

For the purpose of what follows, “RCV” means an electoral system in which *voters rank candidates* and *ballots transfer* to next-ranked picks until *all seats in a district are filled*. I focus on types used in U.S. public elections, not, e.g., Tideman’s (1987) ranked pairs, the Coombs rule (Grofman & Feld, 2004), Borda count, nor other theoretical versions. Broadly, such systems can facilitate (a) majority winners in single-seat districts, (b) majority rule with minority representation in multi-seat districts, or (c) majority sweeps in multi-seat districts. Also, they can facilitate single-party, multi-party, or weak-party government. I say “facilitate” because much depends on how (and whether) voters rank choices.

Emphasis is on American politics themes, drawing from comparative politics as necessary. One key difference between the two contexts is two- versus multi-party politics. In most other countries, ranked ballot has been imposed in contexts with multiple parties: Australia (Farrell & McAllister, 2006), Ireland (Gallagher, 2005, pp. 512–4), Malta (Hirczy de Miño & Lane, 1996, p. 24), Northern Ireland (McGarry & O’Leary, 2006), New Zealand (Cheyne & Comrie, 2005), Scotland (Curtice, 2007), and most recently Wales (Slaughter, 2020). In the United States, two-party politics have been constant, and winning RCV has tended to involve working with critics of partisanship (Gehl & Porter, 2020; Thompson, 1913). (Both stories obtain in Canada (Lucas, 2019; Pilon, 2006).)

Overall, I want to make two big points. First, there is no one ‘type’ of RCV. Rather, the ranked ballot can be worked into a range of electoral systems. Key variables include: district magnitude (the number of seats per district), ballot type (ranked or something else), allocation rule (how votes turn into seats) (Rae, 1967), and rules that do or do not induce slate voting.

Second, we should think about ranked ballot from the operative’s perspective. Voting, ranking, and candidate recruitment do not occur in a vacuum. Politicians care about getting elected (Mayhew, 1974). Skilled ones make deals with interest groups, as well as other politicians, to get shared control of government (Schattschneider, 2004). In turn, these coalitions are likely to care about how voters rank choices (Laver, 2000). My point is not to minimize other perspectives, e.g., voter choice (Maloy, 2019) and opportunity to elect (Guinier, 1992). Rather, it is to highlight strategic issues.

The essay begins with RCV ‘types’ that are/have been used for U.S. public elections. Part two sketches a simple model of voting and seat allocation in each of the types. This shows what happens when voting is polarized and voters are able to rank all choices. The model draws attention to several issues, all of concern to the operative: mechanical effects on minority representation, consequences of strong/weak party cues, problems from ballot exhaustion/truncation, and problems from cross-aisle preference flows (majority reversal and serving two masters). I allude to the problem of “vote management,” or optimizing the number of nominees and how votes are distributed among them. Section four introduces a third party. Core results are: outcome sensitivity to minor variation in third-party vote distribution, this party’s pivotal status, and (counterintuitively) that the ‘proportional’ system minimizes its impact. The essay concludes on voter ‘error’ and descriptive representation.

## 2 Types of ranked voting in the United States

Most RCV systems derive from the single transferable vote (STV), so that is worth describing up front. A candidate must meet a “win threshold” (or quota), usually:  $\lceil \text{total valid votes} / [\text{seats in district} + 1] \rceil + 1$ . Votes above threshold are *surplus*; they transfer to next-ranked picks. If no candidate meets threshold, the trailing candidate is *eliminated*, and ballots in their ‘pile’ transfer to next-ranked picks. The count iterates between surplus transfer and elimination until all seats have been filled. (There are many ways of deciding which ballots, or portions thereof, are surplus. See Ranked Choice Voting Resource Center (2020) for some variations.) If there is only one seat in the district, STV becomes the Alternative Vote (AV). The quota (or “win threshold”) is a majority, and surplus cannot exist.

AV is now widespread in local government, and some states use it for party primaries. Maine uses it for statewide primaries and congressional general elections (FairVote, 2020). Another recent innovation is to apply AV in the second round of a non-partisan two-round election (Herz, 2020). In Alaska, the only jurisdiction to adopt this so far, four candidates will proceed to the AV round, regardless of party designation. Ann Arbor (MI) used AV for a partisan mayoral election in 1975 (Ratner, 2018). During the Progressive Era, 11 states used either AV or Bucklin voting for statewide party primaries (Weeks, 1937). Bucklin is similar to AV with one exception: candidates are not eliminated. Rather, in each round of counting, lower preferences are added to higher preferences, until a majority winner emerges (Hoag, 1914a).

STV is used in Albany (CA), Eastpointe (MI), Palm Desert (CA), Cambridge (MA), Arden (DE), and Minneapolis for park board elections (since 2006). The first three of these

resulted from voting-rights claims (or threats thereof) against citywide plurality systems. Arden has used STV since 1912, when it was a single-tax colony (Proportional Representation League, 1915, p. 3). Cambridge retains STV from an earlier reform wave, 1915-47, when 23 cities adopted it as part of council-manager charters. One more, New York City, combined STV with a separation-of-powers system (Amy, 1996; Santucci, 2017; Weaver, 1986).

A third version is known as the “bottoms-up” system (Sanders, 2011). Like STV, it uses multi-seat districts, but there is no quota. Trailing candidates are eliminated, and their ballots redistributed, until all seats in a district are filled. Five states used this for 2020 Democratic presidential primaries. District magnitude was the number of delegates in each jurisdiction. In contrast to ‘standard’ bottoms-up, however, transfers brought candidates to 15 percent (per Democratic National Committee rules). Then, candidates earned delegates in proportion to their final-round vote shares.

Fourth is the “block-preferential vote” (BPV), “exhaustive preferential” system, or “sequential RCV.” This attempts to combine AV’s majoritarian logic with multi-seat elections. Voters rank all candidates at the same time, but a separate tabulation is run for each seat. The win threshold is a majority. After the first candidate is elected, *all ballots in their pile* count toward next-ranked choices, and other ballots count toward highest-ranked choices (who have not been elected). Elimination occurs if, in any tabulation, someone cannot get to a majority. The process repeats until all seats are filled. Currently, three Utah cities use BPV. It was adopted (but not implemented) in Ferndale (MI), 2004. The system is called “block” because it uses AV to build up a full slate. In that, it is related to multi-seat plurality (wherein the voter may cast as many votes as there are seats), commonly known as “block vote.”

Similar to BPV was the commission system with Bucklin voting, adopted in several cities from 1909 onward (Bucklin, 1911; Johnson, 1914; Porter, 1914). Under the commission system, candidates would run citywide in a series of “numbered posts,” which, at the time, corresponded to functional departments (e.g., parks, water, roads). In modern times, these become, e.g., Seat A, Seat B, Seat C. The candidate declares which seat they are contesting, and the election is city- (or district-) wide. It is similar to BPV in that the same majority gets to fill every seat. Many cities still retain numbered posts, so adopting AV would be repeating history.

Any of these – AV, STV, bottoms-up, BPV, and AV with numbered posts – can be combined with rules that encourage slate voting. Australia is most conspicuous for these: grouping co-partisans on the ballot, permitting voters to vote a predetermined rank ordering (which may include multiple parties), and declaring a ballot invalid unless it contains some minimum number of rankings (Reilly, in press; Reilly & Maley, 2000). Another basic issue is whether ballots include party labels at all.

Three slate-related issues were at least debated in American history. A so-called Gove (1894) system would have let the voter choose one candidate and, by extension, that person’s rank-ordering. In New Jersey, where Bucklin-commission was widespread, ballots were invalid unless the voter ranked at least one candidate for each numbered post (Rosenthal & Santucci, 2020). States with majoritarian ranked-ballot primaries required at least two rankings (Weeks, 1937, p. 65). Finally, the reigning STV proposal (combining it with council-manager government) drew fire for including nonpartisan ballots (Thompson, 1913).

### 3 Simple model of ranked voting with two parties

This section demonstrates seat-share outcomes for a polarized electorate that can rank all choices, building on Santucci and Reilly (2020), and thanks to political scientist Andy Eggers.

Let there be 100 voters in a city with a three-seat assembly. There are 26 candidates, A-Z. 51 voters rank them A, B,..., Z. 49 voters rank in reverse: Z, Y,..., A. To keep things simple, say that these voters are evenly distributed throughout the city.

Under AV, the city is divided into three single-seat districts. Since A cannot run in every district, the first three candidates (A, B, C) run in one each. Party Z does the same (Z, Y, X). With a majority in every district, the A-Z voters win each. Result: 3 for Party A, 0 for Party Z. Note that AV in a numbered-post system gives the same result *even if Party Z is a majority in some neighborhood*.

Under STV, the quota (or “win threshold”) is  $100/(3+1) + 1 = 26$ . A gets the first seat. Their surplus ( $51 - 26 = 25$ ) transfers to B, now one vote shy of win threshold. Z is the next candidate with a quota, and they get the second seat. Their surplus ( $49 - 26 = 23$ ) transfers to Y. All trailing candidates are eliminated, as none has votes to contribute. B gets the third seat, with more votes than Y. Result: 2 for Party A, 1 for Party Z.

Under bottoms-up, A and Z get seats. No other candidate had votes to contribute on elimination. The council is left with a vacancy. This is unlikely in practice, however, because parties typically run as many candidates as they expect to win (see note on “spread the preferences” in the next section).

Finally, under BPV, A gets the first seat. All their votes transfer, at full value, to candidate B. In the second tabulation, B gets the seat (now with 51 votes from A). All their

votes transfer, at full value, to candidate C. In the third tabulation, C gets the seat (with 51 votes from B, which originated with A). Party A-aligned candidates win all three seats.

## 4 Strategic implications for two-party politics

Although the model’s assumptions may seem silly, it highlights strategic aspects of ranked-ballot elections. In polarized electorates, three of four systems *do not deliver minority representation*: BPV, AV numbered-post, and pure AV (unless some districting solution is found). Under BPV, such results have obtained in Australian national (Reilly & Mailey, 2000, pp. 42–3, 57) and local elections (Sanders, 2011). In America, Progressive Era advocates of ranked-ballot elections abandoned numbered-post for this reason (Thompson, 1913, p. 420; Hoag, 1914b, p. 54).

Second, it shows what happens if *party cues matter*. Consider Alvarez et al. (2018), who compared ballot data from partisan and nonpartisan AV races in Pierce County (WA), 2008. In the partisan races, most voters ranked their preferred party’s candidates. In the nonpartisan race, rankings reflected other factors. None of this is surprising. One year later, however, leaders in both parties orchestrated AV’s repeal, responding to an independent victory in the nonpartisan race (Eberhard, 2017). Facing similar problems, Progressive reformers in STV cities found a need to create “good government” parties (Harris, 1930). This led Gosnell (1930) to analyze aggregate transfers in the city where such parties had been perfected. He found that “rivalry between the [reform slate] and the organization Republican party outweighed all other factors.” Finally, in Cleveland (1913-19) under single-seat Bucklin, “alternative votes of the independent voters would tend to build up the aggregate



vote of the party candidates, but the regular party voters would contribute nothing to the aggregate vote of the independent candidates” (Maxey, 1922, p. 85).

Third, the model draws attention to “ballot exhaustion,” or when some ballot does not continue to a decisive round of counting, either because a voter has “truncated” their rankings, or because they have not ranked viable candidates. Analysts of ballot exhaustion have tended to study AV, pointing out winners without “true” majorities (Burnett & Kogan, 2015; Kilgour et al., 2020). But in multi-seat elections, we may care about *legislative majorities*. In the STV example above, Party A won a majority because its voters gave candidate B their second choices. This did not happen in New York City, where, at the first STV race in 1937, reformers failed to win a seat majority. McCaffrey (1937, p. 45) writes, “the Democrats won two or three more places than their proportion of first choices would have entitled them to receive because of the large number of exhausted ballots cast by members of the opposition.” One solution (Maltese) is to allocate seats based on parties’ first-choice vote totals (Hirczy de Miño & Lane, 2000, p. 183). Another is to use open-list PR (OLPR) instead, getting rid of rankings and transfers altogether (Gosnell, 1939). With it, votes for candidates determine two things: how many seats each party will get, then who in those parties will get seats. Exhaustion in OLPR is a nonissue.

Related to ballot exhaustion is the problem of “vote leakage,” i.e., when *transfers cross party lines* (Gallagher, 1978). This encompasses two possible issues. One is *majority reversal*, e.g., votes leave Party A, then help Party B win more seats. An example of this occurred in Cincinnati, 1955, when the Republican Party won a first-choice-vote majority, but the “good government” slate won a seat majority on transfers (author’s work-in-progress). One fix might be the Maltese solution, noted above, of allocating seats to parties based on first-

choice votes. OLPR also obviates leakage.

A second “leakage” problem might be called *two masters*: when one party’s winners owe their seats to voters from a different party. This is especially likely when a party “over-nominates,” i.e., runs more candidates than it can elect. It is rational to do this if expectations are unclear (e.g., where the RCV party system does not track voter registration). The operative recruits a slate of “neighborhood” candidates, per normal STV strategy (Carty, 1981; Bowler & Farrell, 1991, p. 305; Schulze, 2011, p. 22), then pads its shared vote with transfers from hopeless candidates (Bentley, 1926, p. 466). If candidates know they are hopeless, they may seek transfers elsewhere. In turn, if elected, they may feel beholden to voters whose transfers got them into office (Donovan et al., 2016; Kousser, 2019; Reilly, 2018, pp. 211–6). Whether “two masters” is virtue or vice depends on the value of party cohesion.

This section has pointed out some strategic issues with two-party politics under ranked ballot. It has not delved into issues of “vote management,” i.e., ensuring that slate candidates each have enough first-choice votes to survive early-round elimination. The discussion of “neighborhood” candidates alluded to a “spread the preferences” (STP) strategy, and STV with parties might make it important (e.g., the *Fair Representation Act*, which would apply STV to U.S. House elections). In addition to rationing nominations, STP involves evening out the first-choice-vote distribution, so that slate members survive early-round elimination (Farrell et al., 1996, p. 34). Nor has this section discussed party primaries, where party cues are lacking and polarization may be weak. In contexts with weak cues, ballot order may matter – as in Australia (Orr, 2002), Scotland (Curtice & Marsh, 2014), and Boulder (CO) (Sowers, 1934, p. 34).

## 5 Simple model of ranked voting with three parties

Say that candidates M and N have launched their own party in the middle of the spectrum. Four voters rank N, M, L,..., A. Three voters rank M, N, O,..., Z. This shared seven percent is inspired by the share of pure independents in the 2019 U.S. electorate (LaLoggia, 2019). Each third-party group aims to keep votes away from its main competitor, although, in practice, they might gang up on largest Party A (Laver, 2000). The overall vote distribution is A-Z (47), Z-A (46), N-A (4), M-Z (3). Again, for simplicity, voters are evenly distributed throughout the city.

In AV and AV with numbered post, Party A wins all seats. Focus on the result in one district. Since no candidate has a majority, M is eliminated, and their ballots flow to N (now with seven). Still, no candidate has a majority. N is then eliminated; four votes go to A (now with 51), and three votes go to Z (now with 49).

In STV, competition is for the third seat. A and Z win outright, transferring surplus to B and Y, who enter the next round with 21 and 20 votes, respectively. Neither has a quota, so M is eliminated. After several further rounds of elimination, these three ballots land in Y's pile (now with 23 votes). Nobody has a quota (26 votes), so N is eliminated. Eventually, N's four ballots land in B's pile, who gets the third seat by default (with 25 votes).

With bottoms-up, M is eliminated first. Their three ballots flow to N. With just three candidates still in the running, all seats are filled: A, Z, and N.

Finally, with BPV, Party A sweeps the district. No candidate has an outright majority. M is eliminated, and their four ballots flow to N. Now with seven votes, N is eliminated. Four of these votes land with A ( $47 + 4 = 51$ ). The other three votes land with Z ( $46 + 3 = 49$ ).

A now has a majority, taking the first seat. In the second tabulation, all A ballots flow to B. In the third tabulation, all B ballots flow to C. Result: A, B, and C win the seats.

## 6 Strategic implications for multi-party politics

Everything noted in Section 4 still applies with a third party. New insights are as follows.

First, results are sensitive to minor change in the distribution of votes across pivotal groups. If just one N-A voter had ranked M-Z instead, every election above would have tied (except for the first two seats in STV). If two N-A voters had ranked M-Z instead, Party Z would have been the big winner (except in bottoms-up). X, Y, and Z get the seats in AV, with or without numbered posts. BPV produces the same. In bottoms-up, M (not N) gets seat three. In STV, the third seat goes to Y instead of B.

Possibly better, from a predictability perspective, is for M and N to control a disciplined party. While that party also would be pivotal, it could cut deals with other parties *as parties* (Sharman et al., 2002). An alternative to elite deal-making is letting voters rely on impressions of party ‘family’ (Clark, 2020; Clark & Bennie, 2008) – unpredictable if ideology has two or more dimensions (note Miller & Schofield, 2003; Treier et al., 2009; Malka et al., 2017).

Finally, STV appears to minimize the impact of M and N groupings. Under each majoritarian system, M and N can change the entire result. With bottoms-up, at least in this case, one of them is able to win a seat. (Hence the importance for major parties of nominating the right number and “spreading the preferences.”) With STV, however, M and N only change which major party has a seat majority. For those who view STV as “proportional” (but see

Farrell & Katz, 2014), this is counterintuitive. At the same time, simply thinking STV is “proportional” may lead to more third-party voting (Blais et al., 2012).

## 7 Conclusion

This article has described the different kinds of RCV used for public elections in the United States and elsewhere. These include rarely-used (for now) and less-understood systems like bottoms-up, BPV, and AV with numbered posts. The “standard” versions are AV and STV, although, as we have seen, the ecosystem is more complicated. Seemingly small and technical distinctions matter. Different allocation rules can produce different outcomes with identical vote and ranking distributions.

Meanwhile, minor variations in vote and ranking distributions can produce different outcomes with the same RCV ‘type.’ Hence party operatives are likely to care about how and whether voters rank choices. The article covered some strategic issues with party competition in RCV systems.

Finally, this article introduced literature from comparative politics and American history. Depending on the kind of “RCV” we study, as well as the outcome of interest, the literature can become vast. For example, I did not cover ethnic voting (Horowitz, 2003; McDaniel, 2018; Reilly, 2001), nor emerging work on election administration (Rhode, 2018). Nor did I cover descriptive representation, which seems to be driven by candidate entry/recruitment (Burnham, 1997, 2013; Hirczy, 1995; John et al., 2018; McGing, 2013; Schwindt-Bayer et al., 2010).

Because this paper adopts a “party operative” perspective, I was not able to cover all

“voter confusion” literature. Voters’ adaption to the ranked ballot has been a major focus in American politics (Donovan et al., 2019; Gosnell, 1939; Lien, 1925; McDaniel, 2016; Mott, 1926; Neely & McDaniel, 2015). As noted above, much comes down to party cues – on the ballot, in the campaign environment, or both. Further, we can differentiate types of confusion, some of which may not reflect confusion at all. Ballot exhaustion stands out as one example. We observe it in the aggregate, but it can result from either of two behaviors: bullet voting or not ranking any (enough) frontrunners. In turn, a voter who truncates their rankings may do it for any of three reasons: not caring, not having been asked for a vote, or not wanting someone to get elected. Therefore, some amount of what looks like confusion may result from strategy (or its absence) and, by extension, the number and nature of political parties (compare Denver et al., 2009).

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## **Conflict of interest**

The author declares no conflict of interest.

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