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

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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.

1. Introduction

Instant runoff voting (IRV) — also known as ranked-choice voting and, outside of the United States, the alternative vote — promises to guarantee majority winners in single-member district elections. Under IRV, voters rank the candidates in accordance with their preferences. If no candidate receives a majority after the initial count of first-choice votes, the candidate with the fewest number of first-choice votes is eliminated; the ballots supporting the eliminated candidate are then redistributed according to the voters' ranked preferences indicated on the ballots. This process continues until a candidate receives a majority of the votes.

In the United States, a number of local jurisdictions use IRV as a replacement for the traditional primary-runoff election system. Under the primary-runoff format, voters participate in two separate elections. In the first round, voters cast a vote for one candidate from among the entire field. If a candidate receives a majority, no runoff election occurs. If no candidate receives a majority of votes, the top two vote-getters compete in a runoff election. IRV, by contrast, only requires a single election where voters rank the candidates. Proponents of IRV argue that a single election is less demanding on voters' time, cheaper for taxpayers, and limits the influence of moneyed interests in politics by reducing fundraising among candidates (for a longer discussion, see Richie, 2003). Furthermore, IRV advocates assert that the instant runoff ensures that no "spoiler candidates" can emerge to deprive the winner of a majority — for example, Ralph Nader in the 2000 United States presidential election — which remains a possibility in a traditional runoff election.

How widespread is the use of IRV? According to FairVote.org,[2] eighteen municipalities and four states in the United States use some variant of IRV. In some cases, the

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[2] A list of municipalities, countries, and organizations that use IRV is available at: http://www.fairvote.org/reforms/instant-runoff-voting/where-instant-runoff-is-used/.

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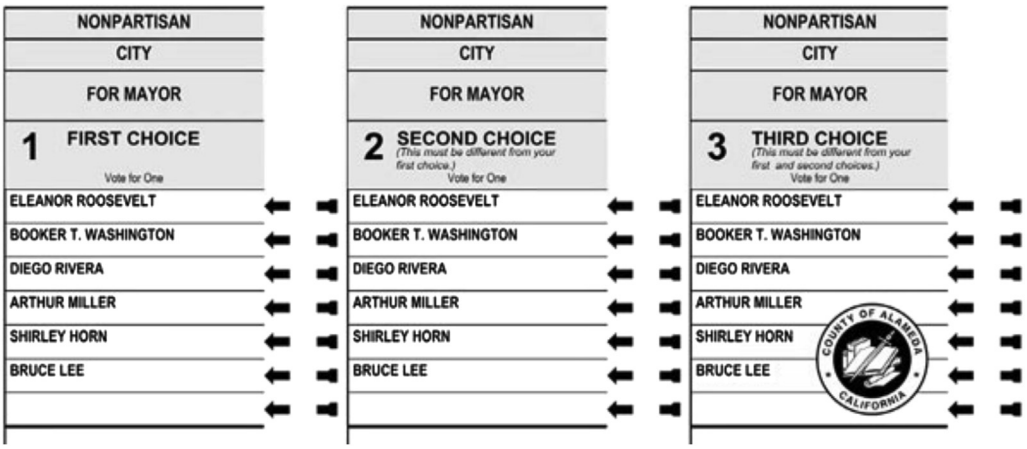

Fig. 1. Sample IRV ballot.

method is used for the election of all major city officials, while in others, IRV is only available for overseas voters who would almost certainly be unable to complete and mail in two ballots in the short window between the primary and runoff elections under the traditional primary-runoff format. Additionally, a number of governments outside of the United States use IRV to elect a variety of officials, as does the Academy Awards (Oscars) and a number of organizations and corporations. Australia is perhaps one of the best-known examples of IRV use: voters have used this method to elect members of the Australian House of Representatives for over 90 years.

Despite its supposed advantages, IRV also has the potential to suffer from a number of democratic shortcomings, three of which we consider here. First, ranking candidates — up to three candidates in the cases we consider — is more difficult for voters when compared with a traditional election where they must choose only one in each race. Put another way, ranking preferences beyond the most favored alternative can be a cognitively laborious task for voters who often seek to minimize the time and effort needed to make political decisions (Downs, 1957; Popkin, 1994). Second, IRV does not ensure that the winning candidate will have received a majority of *all votes cast*, only a majority of *all valid votes in the final round of tallying*. Thus, it is possible that the winning candidate will fall short of an actual majority when a substantial number of ballots are eliminated, or "exhausted," during the vote redistribution process. Third, and related to the previous point, there is some probability that a voter's ballot will become exhausted, eliminating their influence over the final outcome. We return to this point in our concluding discussion.

2. Instant Runoff Voting: benefits and challenges

Instant runoff voting (IRV) is an electoral system that provides voters the opportunity to rank-order candidates according to their preferences. A voter under IRV ranks her most favored candidate as her first choice, her second most favored candidate as her second choice, and so on. See Fig. 1 for a sample IRV ballot. In this example, the ballot has three columns corresponding to the voter's first, second, and third choice. All candidates are listed in all three columns, and voters are asked to select only one candidate from each column. It also states that each choice should be different from the others. Almost every implementation of IRV in the U.S. limits the number of rankings that a voter can make, as in this example, because allowing voters to rank all possible candidates is too technically taxing to implement in practice given the available voting and tabulation technology.

Under most iterations of IRV, if no candidate receives a majority of first-choice votes, the candidate with the smallest number of first-choice votes is eliminated. The ballots that ranked the eliminated candidate as the first choice are then redistributed to the second listed choice. The process is then repeated in the second round and so on. If at any point the voter did not rank a next choice (assuming her most favored choice or choices are eliminated), or all of the choices on the voter's ballot have been eliminated, the ballot is "exhausted" — meaning that it is excluded from future vote redistributions, and it does not affect the final outcome of the election. The ballot, in essence, is discarded. The process ends once a candidate receives a majority of *the remaining* valid votes.

IRV is very similar to the single transferrable vote (STV)[3] in that — at least theoretically — both electoral systems have the potential to provide better representation for the electorate compared to First Past the Post (FPTP) systems, with proponents defining "better" to mean the election of candidates supported by a greater percentage of voters. Indeed, unlike

[3] STV is, in essence, IRV in multimember districts. Under STV, however, it is difficult for both parties and voters to be strategic because there is the possibility of wasting votes on one candidate when the extra votes would be more impactful had they been cast for a different candidate from the same party (Bartholdi and Orlin, 1991). Parties, recognizing this problem, often encourage their party identifiers to "spread the preferences" among all candidates from the party to ensure that as many of the party's candidates will be elected as possible (Bowler and Farrell, 1995). Unlike IRV, STV introduces an element of randomness to the process: After a candidate receives the requisite number of votes (called the Droop quota), which votes should be transferred to the next-ranked candidates? In most iterations of STV, the votes that are transferred are chosen through a random draw (Farrell and McAllister 2003). For a longer description of how STV works, see Doron and Kronick (1977), Richie (2003), and Tideman (1995).