Research Update

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Increased Error Rates in RCV and the Impact on Election Outcomes

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Opponents to Ranked Choice Voting (RCV) are often critical of the number of ballots that are discarded with RCV compared to single-choice ballots (Cormack, 2024; Pettigrew & Radley, 2023). These papers seem to argue that requiring voters to mark more than a single candidate is more confusing than the single-vote alternative and hence leads to higher ballot error rates. This is often followed by claims that the use of RCV will produce election results that could have been entirely different if the discarded ballots had been counted. This claim, while possible, seems logically unlikely.

First, for the discarded ballots to have any potential impact on the outcome of an election, the margin of victory must be less than the number of discarded ballots. Two recent studies critical of RCV report discarded ballot rates around 0.5–0.6%, with nearly all discarded rates reported as less than 2% (Cormack, 2024; Pettigrew & Radley, 2023). While possible, recent margin of victory reports on state legislative elections show that from 2020 to 2023, the percentage of elections determined by 0.5% or less was only 1%[1] (https://ballotpedia.org/Margin-of-victory_(MOV), n.d.).

However, if the margin of victory were small enough that the discarded ballots could have changed the outcome, it is extremely unlikely that all would have voted for the losing candidate. It is more reasonable to assume that the discarded ballots would more closely follow the same distribution as the counted ballots as there is no reason to think that it would not simply be a random sample of the ballots cast.

It should be acknowledged that voters experiencing increased confusion when marking their ballots could share similar characteristics. Cormack, et al. discuss various characteristics that show potential associations with increased ballot errors (Cormack, 2024). However, to conclude that supporters of a particular candidate are more likely to be confused by ranked-choice ballots is not only problematic, but potentially quite offensive as it seems to suggest that supporters of that candidate are less capable than the supporters of other candidates.

It is more likely that the rejected ballots represent individuals with a more diverse voting pattern. For example, consider a hypothetical election where 1,000 votes are discarded. One would expect that these discarded ballots look more like the observed ballot distribution. In this case, the 1,000 uncounted ballots should exhibit the same pattern as the rest of the electorate, and the discarded ballots would not be overwhelmingly for the losing candidate, especially in close elections.

However, let us consider a hypothetical situation where the uncounted ballots are heavily in favor of the candidate that did not win. If the discarded ballots were extremely unbalanced at 2:1 for the losing candidate, then the impact of the uncounted votes would be only 667 for the losing candidate to 333 for the winning candidate, for an impact of only 334 votes, rather than the full 1,000 that were discarded. If it is assumed that the discarded rate is 2% (the upper limit of the reported error rates (Cormack, 2024; Pettigrew & Radley, 2023)), then the 1,000 discarded ballots would come from a total of 50,000 ballots cast. For the 334 votes to change the outcome of the election, the original 49,000 counted ballots would have to have resulted in an election with results of 24,667 to 24,333 (50.3% to 49.7%) or closer. While it is possible such scenarios could occur, they are likely to be the exception rather than the rule. With a more common, but still elevated, error rate of 1%, the election result would need to be 49,667 to 49,333 (50.17% to 49.83%).

As another example, consider the election results for municipal seats in Utah County, Utah, during the 2023 election. In this election, 13 seats were available. Of these 13, only 2 had discarded vote totals large enough to possibly change the result of the election. The third seat in Payson, which was decided by 144

1 2020: 56/5875; 2021: 3/220; 2022: 65/6278; 2023: 2/578; Combined: 126/12951

votes, is reported as having 187 votes discarded. While it is worth noting this was the third available seat (meaning two candidates had already been selected, ballots adjusted accordingly, and higher proportions discarded for ballot exhaustion), with a higher-than-normal discarded rate of 7%, it is possible that these 187 votes could have changed the outcome. However, it is unlikely as this change would have required less than 44 (23.5%) of the discarded ballots to have been cast for the declared winner. As the winner had close to 50% of the vote, it is more likely that the distribution of uncounted votes would have been closer to an even split and would not have affected the outcome.

A different example that is more striking was the first seat in the Lehi City Council election. For this election, the difference in votes was only 35, where 69 ballots are reported as being discarded. This seems far more concerning, however the distribution of votes among the discarded ballots required to change the result is almost identical to the Payson seat. If 17 of the 69 discarded ballots (24.6%) had voted for the winner, then the result would have resulted in either no change or a tie. As this was the first seat, it is possible that multiple of the 69 discarded ballots would have been exhausted and resulted in no votes for either of the top two candidates, potentially reducing the impact of these 69 ballots even more. Thus, it is possible, but unlikely, that these would have made a difference.[2]

Another important idea to consider in any discussion about ballot rates is the following. If ballot error rates that are large enough to affect the outcome are concerning, certainly we should also be concerned by the impact of voters that do not vote for the final two candidates in a plurality election as those amounts are also large enough to swing elections. In some hotly contested 2024 elections, third-party voters could have changed the election results if they voted exclusively for one candidate over another. The Virginia Governor's race and Senate races in North Carolina and Colorado were all decided by a smaller margin than those that voted for a third party candidate. With an RCV election, these third-party voters could have cast a vote for one of the two potential winners. With a single-vote approach, the third-party voices had no impact on the outcome. While it is unlikely all third-party voters would vote the same way, the similar nature of their original vote suggests their secondary votes would likely be more similar as well. Thus, if we really are worried that neglecting to listen to portions of the electorate could potentially affect the outcome of an election, then we must support a form of voting, like RCV, that does that for these third party voters. Especially when those groups are typically a far larger portion of the electorate than the size of most ballot error rates.

In conclusion, while it is possible that error rates for RCV could affect the outcome of a close election, this result is unlikely. Rather, it is more likely that the rejected ballots are a random sample of all the ballots, and hence would follow the same pattern as the rest of the electorate, resulting in no change to the outcome if no error had been made.[3]

2 In this election, any change would have been inconsequential as the runner-up for the first seat won the second seat by a large margin.

3 It is desirable, however, that all ballots be counted when possible, and education and encouragement for voters to learn the process could be beneficial in lowering the rate of ballots discarded due to uninterpretable errors.

End Notes

https://ballotpedia.org/Margin-of-victory_(MOV). (n.d.). Retrieved from Ballotpdia.org: https://ballotpedia.org/Margin-of-victory_(MOV)

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