

Ranked choice voting outperforms the winner-take-all system used to elect nearly every US politician

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Ranked choice voting makes use of more information from the voters than plurality voting.

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American democracy is straining under countless pressures, many of them rooted in structural problems that go back to the nation's founding. Chief among them is the "pick one" plurality voting system – also called winner-take-all – used to elect nearly all of the 520,000 government officials in the United States.

In this system, voters select one candidate, and the candidate who receives the highest number of votes wins.

Plurality voting is notorious for producing winners without majority support in races that have more than two candidates. It can also create spoilers, or losing candidates whose presence in a race alters the outcome, as Ralph Nader's did in the 2000 presidential election. And it can result in vote-splitting, where similar candidates divide support, paving the way for a less popular winner. This happened in the 2016 Republican primaries when Marco Rubio, Ted Cruz and John Kasich split the anti-Donald Trump vote.

Plurality can also encourage dishonest voting. That happens when voters are pressured to abandon their favorite candidate for one they like less but think can win. In the 2024 elections, for example, voters whose preference for president was Jill Stein, the Green Party nominee, might have instead cast their vote for Democrat Kamala Harris.

An increasingly well-known alternative to plurality voting is ranked choice voting. It's used statewide in Maine and Alaska and in dozens of municipalities, including New York City.

Better performance

Whereas plurality voting allows voters to select only one candidate, ranked choice lets them rank candidates. If a candidate secures a majority of first-place rankings, they are the winner just like they would be under plurality.

But the two systems diverge when there is no majority winner. Plurality simply chooses the candidates with the most first-place votes, while ranked choice voting eliminates the person with the fewest first-place votes and transfers their votes to the next candidate on each ballot. The process is repeated until there is a majority winner.

Ranked choice voting makes use of more information from the voters than plurality, but does it avoid some of the problems plurality suffers from?

We are a team of mathematicians who recently concluded a study aimed at answering this and related questions. We analyzed some 2,000 ranked choice elections from the U.S., Australia and Scotland. We supplemented those real-world results with 60 million simulated elections.

The results were clear: Ranked choice voting performed much better across all the measures we tested, including spoiler, vote-splitting, strength of candidates and strategic voting.



Eugene Peltola Jr. holds the Bible during a ceremonial swearing-in for his wife, U.S. Rep. Mary Peltola, D-Alaska, on Capitol Hill in Washington, D.C., on Sept. 13, 2022.

AP Photo/Jose Luis Magana, File

Empowering voters

Plurality voting produced a spoiler up to 15 times more often than ranked choice voting. And it was 50% more likely to elect an extreme candidate. Plurality, furthermore, was highly susceptible to vote-splitting, while ranked choice voting was nearly impervious to it.

Ranked choice voting picked strong candidates up to 18 times more frequently than plurality voting, where by “strong” we mean candidates who received many first-place votes and also had broad support, even among their noncore supporters. This method also rarely elects a weak or fringe candidate and typically elects a candidate near the electorate’s ideological center.

Ranked choice voting is also more resistant to various forms of strategic behavior such as bullet voting, where voters choose only one candidate despite the ability to rank more, and burying, where voters disingenuously rank an alternative candidate lower in the hopes of defeating them.

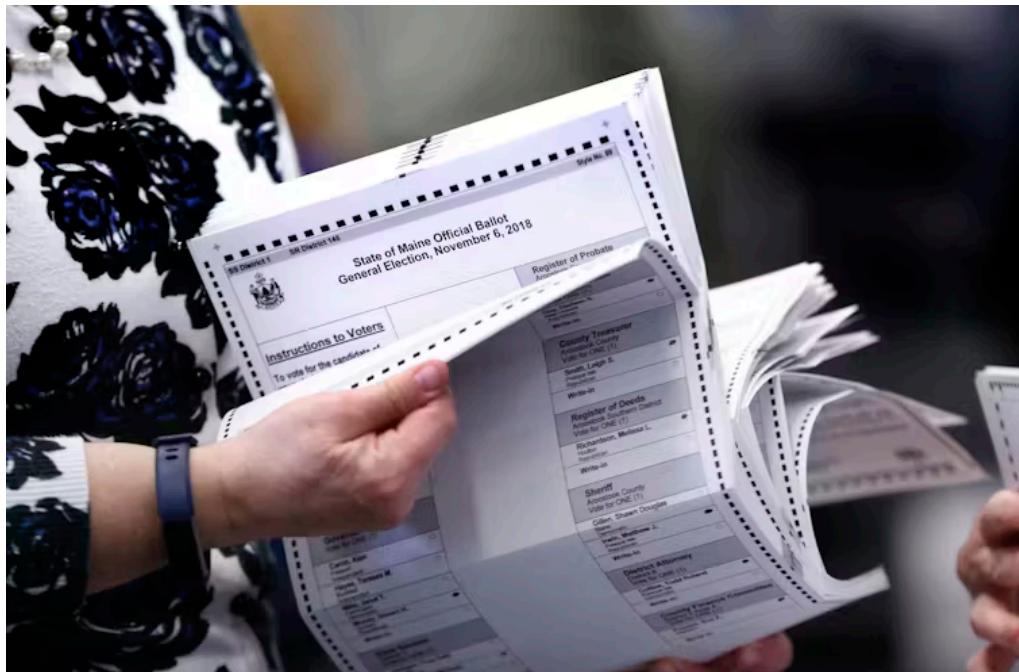
Our research also studied the ways in which election systems can influence behavior. In a plurality election, voters are afraid that their ballot could be “wasted” on a candidate who doesn’t have a shot at winning, or that they might contribute to a spoiler. Our study shows that ranked choice voting largely avoids these pitfalls, empowering voters to express their true preferences rather than being strategic.

We found that candidates in ranked choice voting elections do best when they adopt the policies the greatest number of people support, meeting the voters where they are.

In Alaska's 2022 special U.S. House election, for example, Democrat Mary Peltola positioned herself firmly within Alaska's center-left base – while still embracing some positions considered conservative outside of Alaska. She won by garnering enough second-place votes from supporters of Republican Nick Begich.

And in the New York mayoral primary in June 2025, Zohran Mamdani won by creating a coalition with another progressive candidate, Brad Lander, and occupying a progressive space representing a range of voters.

The Alaska and New York examples highlight some differences with plurality voting, which often favors appealing to a narrow base without the necessity of reaching out beyond it.



Ballots are prepared to be tabulated for Maine's 2nd Congressional District House election on Nov. 12, 2018, in Augusta, Maine. The election was the first congressional race in U.S. history to be decided by the ranked-choice voting method.

AP Photo/Robert F. Bukaty

Mending a broken system

A mathematically interesting feature of Alaska's 2022 special U.S. House election is that Begich beat both Peltola and Republican Sarah Palin in head-to-head contests – meaning that more people ranked Begich above Peltola than the other way around – but lost the ranked choice voting election to Peltola.

Critics seize on such cases as reasons to avoid ranked choice voting. But our work shows that these are statistical outliers, occurring fewer than 1% of the time.

Overall, our research shows that ranked choice voting elects candidates with broader support and greater democratic legitimacy than plurality. It therefore seems sensible that voting reform advocates continue to pursue this method as an alternative to plurality voting.

At a time when Americans are losing faith in democracy, voters cannot afford systems that hand victory to unrepresentative candidates and force them to play tactical games. The math is in, and the evidence is overwhelming: Plurality voting is broken. Ranked choice voting will not solve every democratic ailment, but it is a good step toward mending them.

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