**ORIGINAL PAPER** 



# The case for the five in final five voting

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#### Abstract

My central concern is not, which electoral system would elect the best winner, but rather: which electoral system would be most likely to elect a Congress that would deliver optimal democratic outcomes? I use a theory of politics as an industry, first presented in Gehl & Porter (2017), that analyzes incentives and behaviors through the lens of competition. I argue that the optimal system is Final Five Voting (FFV), which is the combination of an open top-five primary and instant runoff voting (IRV) in the general election. Open, non-partisan primaries that select two candidates exist in California and Washington, while Alaska elects four in its open primary. Here I explain why the optimal number of candidates to advance from the primary to the general election is five.

**Keywords** Final Five Voting · Political system · Partisan gridlock · Election reform · Political innovation · Political parties · Healthy competition · Party primary · Instant Runoff Voting · Plurality Voting

JEL classification D71 · D72

# **1** Introduction

Electoral scholars and reformers have long theorized about which voting system elects "*the best winner*." It is a highly technical and contentious debate in which there is little agreement (Blais, 1991). But perhaps asking "*which voting system elects the best winner*?" is asking the wrong question.

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First, it is not a question that can be expected to have a "right" answer. Any answer will be based on a subjective and largely hypothetical weighing of each system's pros and cons, as well as on a subjective conception of what it means to be "the best winner." For example, some contend that "the best winner" represents the ideological center of a constituency (Robinette, 2020), others contend that "the best winner" has the strongest (versus widest) support (and vice versa), etc. There are dozens of criteria to choose from and a multitude of ways to place value upon such criteria (Tideman, 2019).

Second, it is not a question whose answer is necessarily helpful. The qualities of the "best winner" may have little to do with how he/she acts in Congress, or how Congress functions as a whole. For example, if we decided that the "best winner" was the ideological centrist, we would lose some of the policy innovation that comes from the ideological fringes, and representatives would lose leeway to diverge from the center to exercise good judgment. Or, if we decided that the "best winner" was the candidate with the strongest support, that winner might not necessarily have the widest support, weakening the winner's mandate and accountability to the district.

Therefore, it is not my intention to join abstract debate about how one identifies "*the best winner*" or which system best identifies that candidate. I am not as interested in which winner an electoral system elects as I am in how an electoral system incentivizes the winner to act in Congress. Though Congress is a representative body, it is foremost a legislative body. There is little value in electing "*the best winners*" if they do not deliver policy results to constituents. If Congress does not pass meaningful legislation, it becomes just a political pageant.

To achieve a system that meaningfully improves our democracy's functionality, we must reconceptualize "good representation" in terms of how legislators represent the public interest. Thus, I present a new, more holistic, and results-oriented inquiry: *"Which voting system best incentivizes elected officials to act in the public interest?"* In this paper, I argue that Final Five Voting (a combination of a nonpartisan top-five primary and an instant runoff general election) is as good as any other voting system in selecting *"the best winner,"* but more importantly, it is best suited to deliver optimal democratic outcomes.

I start by explaining why both party primaries and plurality voting must be abandoned. Then I make the case for replacing plurality voting with instant runoff (IRV) general elections, as IRV holds representatives accountable to the majority of their district, introduces accountability-inducing competition, and incentivizes cross-partisan legislating. I also compare IRV to other general election alternatives in terms of their theoretical capacity for delivering policy outcomes. Next, I explain why advancing five candidates from the primary to the IRV general election is the "sweet spot." There should be up to five candidates in the general election, as the presence of more candidates lowers barriers to entry, creates a wider policy dialogue, increases political competition, adds dimensionality to elections, reduces vote-splitting, drives consensus legislating, and mitigates the center-squeeze effect. There should also be no more than five candidates, to allow all voters to retain all candidates in their shortterm memory, reduce ballot exhaustion, maintain focused policy conversations, and allow each candidate unpaid media coverage. I also argue against using IRV in the primary.

### 2 The Problem: Party Primaries and Plurality Voting

The need for electoral innovation is obvious and urgent. In today's hyperpolarized political climate, the government is 'duopolized' by two tribalistic parties that seldom deliver results yet continue to stay in power. The consequences include unprecedented gridlock (Binder, 2015), historically low trust in government (Pew Research Center, 2019), dwindling socioeconomic competitiveness (Porter et al., 2019) and salient policy issues being left unresolved.

From the lens of industry competition, this dynamic is what we call unhealthy competition. Republicans and Democrats effectively manipulate the 'rules of the game' to shut out competition from third parties and independents. With no viable competition to keep them on their toes, the major parties have no incentive to deliver results.

Two such 'rules of the game' are party primaries and plurality voting. First, party primaries are dominated by highly partisan ideological voters and special interests. Candidates must curry favor with these groups to advance to the general election (Edwards, 2013). When in office, they accomplish this by voting against consensus and/or bipartisan legislation (McCarty et al., 2013; Page and Gilens, 2018). Further, 83% of congressional seats are so safely partisan that the winner is essentially decided in the primary (Unite America, 2021). Consequently, most representatives are accountable only to uncompromising ideologues.

Second, the general election is conducted by plurality voting, implying that the candidate with the *most* votes (but not necessarily a *majority* of votes) wins. In a three-way race, a candidate can win with just over a third of the vote. This means that candidates are incentivized to disperse along the ideological spectrum and target bands of partisans rather than compete for broad support (Osborne, 1995). Voters cannot punish major-party candidates for this behavior because Republicans and Democrats are the only viable options.<sup>1</sup> Due to the "spoiler effect," votes for third party and independent candidates are unattractive options. For example, in the 2016 presidential race, Jill Stein supporters were told not to vote for her, as she would 'spoil' the election by drawing votes from Hillary Clinton, and cause Trump to win. Thus, many third-party candidates and independents are discouraged from running.

Party primaries and plurality general elections combine to create predictable paths to reelection: Incumbents please their bases by refusing to compromise. Thus, our voting system discourages bipartisan behavior and blocks innovative challengers. Therefore, if we return to the question of *"Which voting system incentivizes elected officials to act in the public interest?"* it is clear that any such system must abandon both party primaries and plurality voting.

<sup>&</sup>lt;sup>1</sup> Duverger's Law (Duverger, 1964), explains that plurality voting tends to produce two-party systems.

#### 3 Replacing plurality with Instant Runoff Voting

Final Five Voting abandons plurality voting and institutes an instant runoff (IRV) general election. Voters rank candidates in their order of preference. If no candidate obtains 50% of first-choice votes, the candidate with the fewest votes is eliminated, and his/her votes are redistributed to the voters' second-choice candidates. This is repeated until a single candidate has more than 50% support.

First, because IRV requires that the winner have majority support, Republicans and Democrats would be motivated to gain broader, cross-partisan support by backing bipartisan legislation. Second, IRV solves the spoiler problem: voters can express first-choice support for a third party/independent candidate, while also expressing later choice support, should their first-choice fare poorly. The reallocation of votes means that third party/independent candidates can run without "spoiling the election." Third, when candidates need to be the alternate choices of their opponents' supporters, they will seek to be attractive across the ideological spectrum. Indeed, a study of IRV use in Australia found that major parties sometimes wage campaigns devised to bolster their attractiveness to minor party supporters, resulting in a "healthy preference flow" of polices (Reily, 2018). In this way, IRV can be expected to foster more cooperative and more consensus-seeking politics.

In many respects, IRV can be said to elect "*the best winner*." IRV meets the majority-support criterion. IRV also elects a winner with strong consensus value; in 2018, every IRV race in America was won by a candidate who gained at least 60% of voters' first, second, or third choices (Landsman et al., 2018). There is some concern that IRV does not *always* elect the Condorcet winner (the candidate who would beat every other candidate in head-to-head races), A study of German Politbarometer surveys found that IRV did not select the Condorcet winner in 19 out of 806 cases, or 2.4% of the time (Song 2022, this volume).

If the "best winner" is the ideological centrist, there are times when IRV does not 'pass the test.' When three candidates are left in an IRV election, if two are close by on either side of the centrist, they can 'squeeze out' the centrist. However, as stated earlier, there is something to be said for not always electing the centrist. Nonetheless, always elects a certain conception of "the best winner" is not the most important goal.

Electoral systems reward rational actors. Representatives must adopt behaviors that their electoral system rewards or risk losing their seats. Many scholars contend that re-election is the single driving force behind every legislator's actions (Harbridge, 2010; Mayhew, 1974). Under IRV, it is rational for representatives to engage in bipartisan behavior, because they can remain competitive while adopting innovative ideas from non-winning candidates. For example, suppose that a race occurred in which Republican and a Democrat squeezed out an independent centrist. Even though the centrist lost, the Republican and Democrat would have moved toward the center to compete for centrist votes. In doing so, they might find common ground or a willingness to compromise. A more productive political culture is established.

One might ask, why would centrists run, anticipating that they will get "squeezed out?" First, because they usually don't get squeezed out (see the German Politbarometer data mentioned above). Second, centrists are in a much better electoral position under FFV than under our current system, where centrists rarely make it through party primaries. With FFV, centrists can make their case to a general electorate (one that in many cases is friendlier to centrists) rather than fighting the less winnable primary battle. Third, as explained above, non-winning candidates can influence policy even if they do not win, whereas in our current system, non-winning candidates have little influence on winning candidates. As exemplified by Australia, where each IRV House race usually has more than six candidates, minor candidates are not discouraged by IRV (Richie, 2017). This demonstrates the power of changing the incentive structure, regardless of who wins. IRV elects *"the best winners"* in the sense that they have *the best incentives* to act in the public interest.

When compared to other general election voting systems, IRV is best suited to encourage cooperative legislating. For example, with approval, score, range, and cumulative systems, giving an approval vote or high score to a second or third choice detracts from the ability of one's first choice to win. Any vote for one candidate works against others. Consequently, campaigns will encourage "bullet voting:" giving an 'approval' or a high score to only the campaign's candidate. Indeed, a poll of voters in Fargo, North Dakota (the first U.S. city to use approval voting) revealed that in that in the 2020 Fargo City Commission elections, 32.4% of one-candidate voters voted strategically. 29.7% said they "thought that voting more than one candidate would hurt my favorite candidate," while the other 2.7% said they did so because "a candidate or leader suggested that I do this" (Voter Preference Research Group, 2020) These systems might essentially revert to plurality voting, because Republicans and Democrats only need to cater to their respective bases to win. Major candidates would calculate that the cost of having one's supporters change 'bullet votes' to multi-candidate votes would exceed the gain from additional approvals or good scores from supporters of other candidates. Thus, major party candidates would not risk angering their bases by supporting bipartisan legislation.

IRV, on the other hand, does not reallocate a voter's ballot until his/her initial preference(s) have been eliminated. Therefore, candidates will rely on being the alternate preferences of other campaigns' supporters, so that they can receive reallocated ballots in later rounds. Thus, candidates are incentivized to engage in consensus-seeking behavior.

IRV also fares well compared to other ranked-ballot systems, in terms of incentivizing legislative output. For example, the Borda count has drawbacks similar to those of approval and scoring systems, since Borda rankings work as scores. The Borda count also fails the majority-support criterion, meaning that the winner is not necessarily accountable to a majority of the electorate. Because Democrats and Republicans are the only viable options in US federal elections, candidates from these parties need only be the lesser of two evils. This does not induce accountability. Rather, it incentivizes candidates to demonize their opponents, furthering polarization. Finally, Condorcet methods are modelled to always elect the centrist candidate (Robinette, 2020), which means we would lose policy innovation that comes from the fringes.

# 4 Replacing Party Primaries with Top-Five Primaries: why five?

Up to this point, I have argued that IRV should replace plurality voting in general elections and that we must abandon party primaries. However, there is still a need for a nonpartisan reduction stage before the IRV general election. Voters should have the opportunity to re-examine their options when it is clear which candidates are viable, and the field in the general election must be narrowed enough that voters can be reasonably informed about their options. At the same time, there should be enough space for several candidates to advance to the general election, including more than one from the same party. Indeed, top-two nonpartisan primaries in California have made general elections more competitive; in 2015, approximately 50% of all races in California were competitive, whereas only 21% were in 2010, before top-two was implemented (Olson & Ali, 2015). A PPIC report points to the positive effects of this competition: While members of other state legislatures have continued to polarize, California's representatives have not (McGhee, 2018), opening the door for major bipartisan compromises like the cap-and-trade law (Schwarzenegger & Khanna, 2018).

However, there should be space for non-major party candidates to advance. Toptwo primaries do not create this space; of the 269 federal races for which California used top-two, only 15 (6%) have seen an independent or third-party candidate advance to the general election (Ballotpedia, 2021a). Therefore, I recommend that the field be narrowed down by a nonpartisan open primary to the top five candidates.

Michael Porter and I recommended top-four primaries in a 2017 Harvard Business Review Report. After reading the report, Scott Kendall developed a ballot measure that instituted top-four primaries with an IRV general election for congressional, state legislative, and state executive offices in Alaska. Between publishing the report and writing our book, *The Politics Industry* (2020), we reevaluated and recommended Final Five Voting, for the following reasons.

1. Why More is Better.

First, when there are more spots for candidates in the general election, there are lower barriers to entry, creating space for third party and independent candidates to advance to the general election. Indeed, more Americans currently identify as independents (44%) than as Democrats (30%) or Republicans (24%) (Gallup, 2021). With more views represented, more citizens will have reason to turnout to vote, increasing voter engagement.

Second, having more candidates will create a wider policy dialogue. Single-issue (or other) candidates with innovative policy ideas can gain traction without "stealing" votes from like-minded candidates. More importantly, the presence of innovative candidates influences the behavior of the eventual winner. As stated above, major party candidates must adopt good policies from their opponents to win second-place and third-place votes. The power of political competition is shown by Ross Perot's 1992 presidential bid. Some 19% of voters were willing to "waste their votes" on Perot because his message of fiscal responsibility resonated so deeply. Without competition for his 19% of the electorate, neither Democrats nor Republicans would have had the political incentive to deliver the four balanced budgets that followed during the Clinton administration. The presence of an extra viable candidate influenced the policy conversation and helped deliver results without changing who won (Gehl and Porter, 2020).

Third, additional candidates increase political competition. Major party candidates can no longer win by simply being the lesser of two evils. Instead of competing to be the less bad of two, candidates must compete to be the best of five. This increases accountability and incentives to deliver results, because if they do not, they will face up to four challengers who might do a better job. Indeed, several studies indicate that increased competition incentivizes responsiveness to more constituents (Ansolabehere et al., 2001; Griffin, 2006; Pildes, 2011).

Fourth, having more candidates adds more dimensions to political races. In this context, 'dimension' means factors voters consider when casting ballots. The main dimension to political races is the left-to-right ideology scale. When there are only two candidates, voters' primary consideration is naturally, *"which candidate is closer to me on the ideological spectrum?"* However, when there are more spots in the race, candidates need more than their ideologies to stand out from the competition. Their ability to demonstrate traits like problem-solving, resolve, and integrity becomes more important. Additionally, incumbents may face same-party challengers in the general election. Being similar to such challengers in ideology, incumbents must compete on other dimensions. For example, they can stand out with an impressive track-record in Congress, and thus are incentivized to accomplish more when in office.

Fifth, increasing the number of candidates who advance to the general election decreases the problem of "vote-splitting" in the primary. When there are many primary candidates but only one proceeds to the general election, votes for similar candidates split available support, shutting popular candidates out of the general election and allowing unpopular candidates to squeeze through, weakening the mandate of the eventual winner. For example, in 2012, under California's top-two primary system, its 31st congressional district sent two Republicans to the general election, despite the majority of the district having voted Democratic (Ballotpedia, 2021b). The Democratic votes were split among too many candidates, allowing the Republicans to squeeze through. Had that race had five spots in the general election, neither party would have been squeezed out.

Sixth, having more candidates in an IRV race has a consensus-driving effect. With plurality voting, it is relatively easy for a polarizing or unpopular candidate to win; in a three-way race, they may only need 34% of the vote. However, in an IRV race where the vote is split among many candidates, it is nearly impossible for a polarizing candidate to win 50% of first choice votes, and such a candidate is unlikely to pick up many votes on later rounds. With IRV, the more candidates there are, the more it makes sense to adopt popular, consensus policies.

2. Why More Than Three.

I have argued that, with respect to candidates, "more is better," but how much more is the right amount? "More" candidates than the current system starts at three. However, competition among three candidates is the prime condition for the aforementioned "center squeeze effect."

The Republican and Democrat on either side of the center do not have to seriously compete to maintain votes of their side of the electorate (since they are the only ones on either side); they simply must capture a few votes from the centrist—and when candidates do not have to seriously compete, they are not held accountable.

Though the "center squeeze effect" could be productive in certain contexts, such as incentivizing major party candidates to adopt consensus policy ideas, mitigating this effect could also be productive; if candidates are not constantly attempting to "squeeze" each other out of the race, they would be more spread out along the spectrum, and a diversity of opinion and policy innovation would result.

#### 3. Why More Than Four.

Having four candidates mitigates the 'center squeeze' effect. A Republican or Democrat who squeezes too close to the middle invites competition from their respective side of the spectrum. Not wanting to lose first-choice votes to new competitors, the Republican and Democrat may opt not to squeeze but instead spread out and be responsive to voters across their side of the spectrum.

However, with four candidates, the squeeze-preventing competition only comes from one side. Either the Republican or Democrat has incentive not to squeeze, but not both. Allowing five candidates to advance invites competition from both sides. Both the Republican and Democrat must spread out to not lose first-choice votes to a new competitor, and more voters (and ideologies) are represented/responded to in the general election field. With five candidates, the middle three candidates are held accountable by competition to both their lefts and rights, and the outermost candidates are held accountable by their ideological neighbors too.

Furthermore, advancing only four candidates could potentially generate a simulated duopoly. It is easy to imagine that much of the time, two Republicans and two Democrats would advance. Creating space for a fifth candidate ensures a lower barrier for diverse startup candidates. Not only might these candidates present new and exciting policy innovations, but their presence challenges the duopoly, preventing the major parties from evading accountability.

#### 4. Why No More Than Five.

Since I have argued that more candidates are better, one might ask, why make the limit five? The goal is to provide the most choice and greatest injection of healthy competition into our elections, but only until we reach the point of diminishing returns, when having more candidates no longer has its intended effect. This upper limit is five, for the following reasons.

First, according to Miller's (1956) *law*, most adults can hold five to nine items in short-term memory. In a good voting system, voters should reasonably be able to learn about, meaningfully distinguish among, and form opinions about their options. When determining the limit on how many candidates should compete in a general election, one should be considerate of those who can hold only five items in short-

term memory. More choice is better, until voters are so overwhelmed with choice that they cannot produce a ballot that accurately reflects their preferences, and voting becomes too much work, and people are discouraged from voting at all.

Second, limiting the field of general election candidates reduces ballot exhaustion. A ballot is "exhausted" when it becomes inactive in a later round of IRV because all the candidates ranked on the ballot have already been eliminated. Exhausted ballots are not inherently bad. They are not wasted votes, since they were considered in an earlier round. They could be attributed to indifference rather than a lack of knowledge about the candidates. However, reducing the field increases the likelihood that voters will rank their ballots completely, meaning that more voters' ballots will be considered in the final rounds of tabulation so that representatives will be held accountable to more voters. Indeed, a study of IRV use in U.S. municipal elections found that ballot exhaustion is lower when there are fewer candidates (Burnett and Kogan, 2015).

Third, a contest among six, seven, eight, or more candidates creates obstacles to meaningful debate and focused policy conversations. For example, the 2020 Democratic presidential primary and the 2016 Republican presidential primary both consisted of crowded fields of candidates. Debates for these races were characterized as lacking "clarity" (Strauss, 2020) and at times as "dirty" (Lee, 2016). When candidates must fight to be heard, they cannot discuss policy meaningfully or productively. They must spend their limited words on blanket statements or memorable one-liners, leaving little room for substantive debate. Though adding dimensionality to elections by increasing the number of candidates can be beneficial by giving candidates more dimensions on which to compete, this becomes counterproductive when the policy/ ideology dimension becomes so drowned out by superfluous dimensions like *who can shout the loudest*?

Fourth, the media do not have the capacity to pay attention to a large number of candidates. One of the benefits of using IRV is that all candidates could expect to receive unpaid media coverage. However, there is a limit to how much the media can cover. If more than five candidates advanced to the general election, the media would likely cover only two or three frontrunners, as happens now. Then voters might assume that only those candidates had a chance of winning and rank only them. Thus, if more than five candidates are sent to the IRV general election, IRV will no longer have its intended effects – creating more competitive elections and giving a platform to more candidates and policy ideas.

Some might ask, if IRV has such great benefits, why not use it in the primary as well as the general election? The answer: it's too complicated relative to any benefit. In San Francisco municipal races, for example, there are an average of eleven candidates in each of their races—that's too many. Also, there is little expected benefit from using IRV to narrow from more than five candidates to five, because the narrowing would rarely change the final result. With or without an IRV primary, FFV will elect a competitive consensus winner.

### 5 Conclusion

I have made the case for Final Five Voting—the combination of a nonpartisan topfive primary and instant runoff voting in the general election. My criterion for voting systems is not which elects "*the best winner*," as this criterion is subjective and not conducive to legislative output. Rather, I argued that Final Five would best motivate the winner to act in the public interest. By replacing party primaries and plurality voting with top-five primaries and instant runoff voting respectively, Final Five would increase policy innovation and accountability. Thus, though the interdisciplinary debate over which system delivers a mathematical best winner is certainly interesting, we should invest in the system that delivers the best policy results.

# References

- Ansolabehere, S., Snyder, J., & Stewart, C. (2001). 'Candidate positioning in U.S. House Elections'. *American Journal of Political Science*, 45(1), 136–159.
- Ballotpedia (2021a). Californiahttps://ballotpedia.org/California.
- Ballotpedia (2021b). California's 31st Congressional District elections, 2012https://ballotpedia.org/ California%27s\_31st Congressional District elections, 2012
- Binder, S. (2015). 'The dysfunctional Congress'. Annual Review of Political Science, 18, 85-101.
- Blais, A. (1991). 'The debate over Electoral Systems'. International Political Science Review, 12(3), 239–260.
- Burnett, C., & Kogan, V. (2015). 'Ballot (and voter) "exhaustion" under Instant Runoff Voting: an examination of four ranked-choice elections'. *Electoral Studies*, 37, 41–29.
- Duverger, M. (1964). Political parties: their organization and activity in the modern state. London: Methuen.
- Edwards, M. (2013). 'The case for transcending partisanship'. Daedalus, 142(2), 84-94.
- Gallup (2021). Party Affiliation. https://news.gallup.com/poll/15370/party-affiliation.aspx
- Gehl, K., & Porter, M. (2017). 'Why Competition in the Politics Industry is Failing America: A strategy for reinvigorating our democracy', Harvard Business School. https://gehlporter.com/wp-content/ uploads/2018/11/why-competition-in-the-politics-industry-is-failing-america.pdf
- Gehl, K., & Porter, M. (2020). The Politics Industry: how political Innovation Can Break partisan gridlock and save our democracy. Boston, MA: Harvard Business Review Press.
- Griffin, J. (2006). 'Electoral Competition and democratic responsiveness: a defense of the Marginality Hypothesis'. *The Journal of Politics*, *68*(3), 911–921.
- Harbridge, L. (2010). Congressional Agenda Control and the Decline of Bipartisan Cooperation, Conference: Northwestern Institute for Policy Research Working Paper. Northwestern University.
- Landsman, T., Penrose, D. S., & Richie, R. (2018). Ranked Choice Voting in 2018: A Mid-Year Report. Analysis of Turnout, Voter Experience, and Election Administration. https://fairvote.app.box.com/s/0 38bz15b80dlsc0mcsgtzxvs2yh4sfp7
- Lee, M. J. (2016). 'Republican debate turns dirty', CNN Politics, 4 March. https://edition.cnn. com/2016/03/03/politics/republican-debate-highlights/index.html
- Mayhew, D. (1974). 'Congressional elections: the case of the vanishing Marginals'. Polity, 6(3), 295-317.
- McCarty, N., Rodden, J., Shor, B., Tausanovitch, C., & Warshaw, C. (2013). 'Geography and Polarization.' Presented at the Annual Meeting of the American Political Science Association Chicago.
- McGhee, E. (2018). Political reform and moderation in California's Legislature: did Electoral reforms make state representatives more moderate?. May: Public Policy Institute of California. https://www. ppic.org/wp-content/uploads/r-0517emr.pdf.
- Miller, G. (1956). 'The magical number seven, plus or minus two: some limits on our capacity for processing information'. *Psychological Review*, 63(2), 81–97.
- Olson, J., & Ali, O. (2015). A Quiet Revolution: The Early Successes of California's Top Two Nonpartisan Primaryhttps://d3n8a8pro7vhmx.cloudfront.net/openprimaries/pages/418/attachments/original/1440450728/CaliforniaReportFinal8.24small.pdf?1440450728

- Osborne, M. (1995). 'Spatial models of political competition under plurality rule: a Survey of some explanations of the number of candidates and the positions they take'. *Canadian Journal of Economics*, 28(2), 261–301.
- Page, B., & Gilens, M. (2018). 'Making american Democracy Representative'. The American Prospect; Princeton, 29(4), 1–11.
- Pew Research Center (2019). Public Trust in Government: 1958–2019www.people-press.org/2019/04/11/ public-trust-in-government-1958-2019
- Pildes, R. (2011). 'Why the Center does not hold: the Causes of Hyperpolarized Democracy in America'. California Law Review, 99(2), 273–333.
- Porter, M. E., Rivkin, J. W., Desai, M. A., Gehl, K. M., & Kerr, W. R. (2019). *A Recovery Squandered* https://www.hbs.edu/competitiveness/research/Pages/research-details.aspx?rid=85

Reily (2018). p.7

- Richie, R. (2017). 'National Implications of Maine Adoption of Ranked Choice Voting', National Civic Review, 106(1).
- Robinette, R. (2020). Better Choiceshttps://betterchoices.vote/
- Schwarzenegger, A., & Khanna, R. (2018). 'Don't listen to the establishment critics. California's open primary works', Washington Post, 18 June.
- Song, C. G. (2022). The Frequency of Cycles and Differences in Outcomes between Condorcet and IRV (this volume).
- Strauss, D. (2020). 'Messy Democratic debate leaves lack of clarity and benefits Trump', *The Guardian*, 26 February.
- Tideman, N. (2019). 'How should votes be cast and counted?'. In R. Congleton, B. Grofman, & S. Voigt (Eds.), *The Oxford Handbook of Public Choice, volume two* (pp. 5–23). New York, NY: Oxford University Press.
- Unite America (2021). The Primary Problem. https://www.uniteamerica.org/reports/the-primary-problem

Voter Preference Research Group. (2020). Approval Voting Case Study: approval Voting Falls flat in Fargo. RCV for Colorado Education Fund.

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