

Approval Voting

Simple, Effective Voting Method Reform

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Center for Election Science

- 501(c)(3) founded in 2011
- Research into improved voting methods and systems
- Disseminate voting best practices
- Build and support a community of voting theorists, activists, and users
- Software development to meet needs of groups that vote
- Consulting: assist organizations to plan, prepare, conduct, tally, and report their elections



<http://electology.org>

Overview

- Consensus: Bad voting method causes problems with US elections
- Approval voting: "Vote for one or more"
 - Big improvement
 - Simple to understand
 - The only really easy-to-implement alternative
- Allow Approval Voting in Colorado and elsewhere!
- Other worthy alternative single-winner methods
- Use Proportional Representation for multi-winner!

Voting Method Issues in a Nutshell

- Democracy requires the election of candidates that reflect the will of the people
- Our current system doesn't even let the people effectively express their will
- So we need more expressive ballots, and voting methods that consistently yield good outcomes

US Voting Method Problems

We use Plurality Voting, AKA Choose-One Plurality Voting, "First Past the Post", which causes many problems:

- Spoiler effect: getting mad at good candidates...
- Accusations "You're wasting your vote, helping enemy"
- Negative campaigning
- Good candidates avoid running
- Disillusioned voters disengage, low turnout
- Learn very little from the electorate

Approval Voting Intro

- Our introductory video on Youtube:
 - [What Is Approval Voting? Plantsville](#)

Vote for one or more

Vote for one or more candidates The candidate with the most votes wins	
ELEANOR ROOSEVELT Incumbent	<input type="radio"/>
CESAR CHAVEZ Labor Organizer	<input checked="" type="radio"/>
WALTER LUM Publisher	<input type="radio"/>
JOHN HANCOCK Physician	<input type="radio"/>
MARTIN LUTHER KING, JR. Minister	<input checked="" type="radio"/>
ANNA MAE PICTOU AQUASH Indigenous Rights Organizer	<input checked="" type="radio"/>

Approval Voting Advantages

- Familiar ballots, just change the directions
- No changes to standard voting systems in wide use
- Voters can show support for all of their preferred candidates
- More positive elections
- Increases participation from candidates and voters
- Generally better outcomes for the electorate as a whole
- More likely to achieve majority approval
- Easy to audit

Approval Voting History



One box per candidate, "No (Oxi)" / "Yes (Nai)".
Voters privately drop a marble in no/yes side of each box.
Used for parliamentary elections in Greece, 1864-1926

Approval Voting Recent History

- Re-invented independently several times in 1960's and '70's: Otteweil; Kellett & Mott; Brams & Fishburn; Weber
- Used in straw polls for United Nations Secretary General
- Used by professional societies like the American Mathematical Society, American Statistical Association
- Used to elect University of Colorado student government twice each year

There is No Perfect Voting Method

- Mathematically proven
- But not by "Arrow's Theorem":
 - Only applies to ranked-choice methods like IRV
 - Doesn't apply to Approval Voting, other rating methods
- Gibbard-Satterthwaite theorem does apply
 - Strategic voting inevitable outside of dictatorship

The Best Voting Method

What if we could read voter's minds, know their positions on issues, their honest assessments of the candidates?

In theory, could evaluate all the options and pick the candidate that represents the greatest good for the greatest number of people.

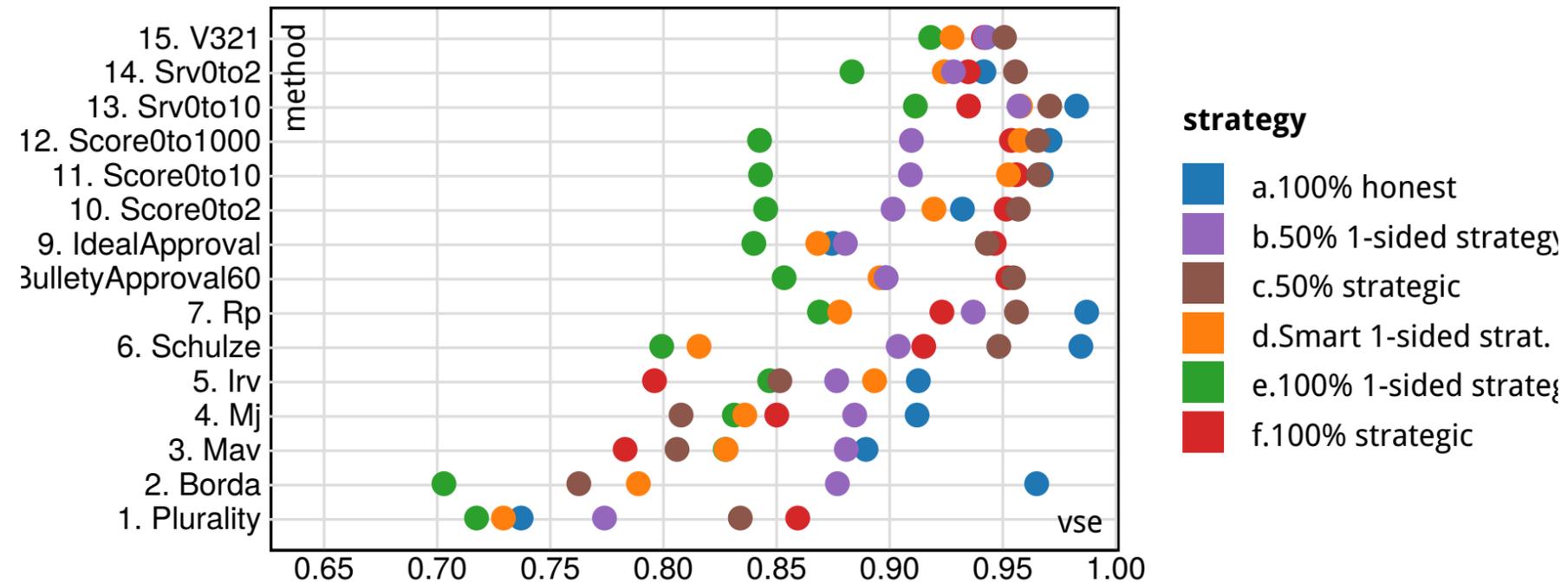
Next approximation: very expressive ballot, completely honest voters, very intricate algorithm

Evaluating Voting Methods

Jameson Quinn's research on practical ballots, voter strategies, range of algorithms:

- Computer simulation of voters, candidates, outcomes
- Calculate how happy voters are with outcomes
- Evaluate impact of strategic voting, including one-sided strategy (e.g. if the voters who support the frontrunner vote honestly, but those who support the runner-up vote strategically)
- Also a "media model": what voters know about candidates

Effectiveness of Different Voting Systems



Voter Satisfaction Efficiency: Jameson Quinn simulations, 2017

- V321: 3-2-1 voting
- Srv0to2: Score runoff voting, scale of 0 to 2
- Score Voting

Approval Voting Opportunities

- Start with local elections
- Great for primaries
 - Choose the best candidate
 - More post-primary party unity
- Usable now by vacancy committees and other straw polls

Colorado a Leader in Election Innovation

- Proportional Representation in early 20th century
- Bucklin voting method very popular, invented in Grand Junction
- Risk-Limiting Audits
- Many other innovations; doing well in state comparisons

And next: Approval voting?

Approval Voting Bill - Jonathan Singer

Modest but important bill **HB17-1281**: defines rules for using Approval Voting

Voluntary use by cities, school districts, special districts

Even Better Methods with Modified Ballots

- Score voting, AKA Range voting
 - Like in the Olympics, Internet Movie Database
 - Voters rate candidates on a scale
 - Candidate with the highest rating wins
 - Approval Voting is Score with just two possible ratings
- Score runoff voting (SRV)
 - Starts like score voting
 - Choose the top 2 candidates based on scores
 - Virtual runoff for winner: which one is rated higher on more ballots

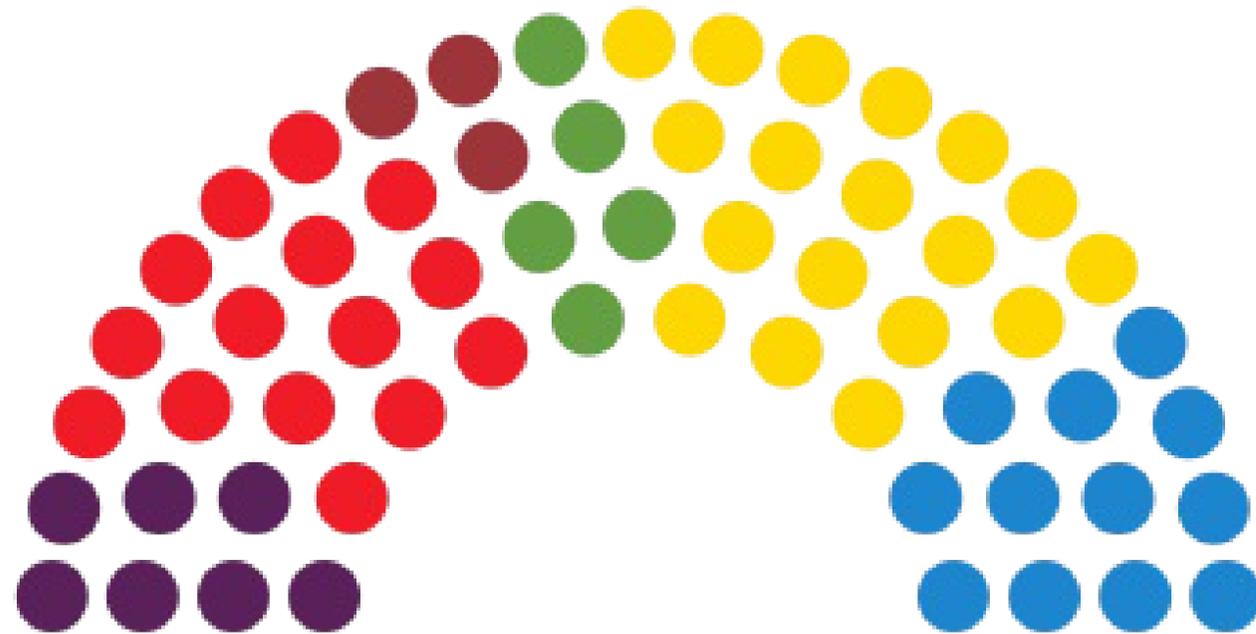
3-2-1 Voting - Highly Robust

- Give each candidate one of 3 ratings: Good, OK, or Bad
- Find the winner in 3 steps:
 - First, the 3 semifinalists are the candidates rated “good” the most
 - Second, the 2 finalists are the semifinalists rated “bad” the least
 - Third, the winner is the finalist who’s rated higher on more ballots (ie, the winner of a virtual runoff)

Proportional representation

For city council, legislature etc, widespread agreement: use proportional representation. Several good methods:

- Single Transferrable Vote: widespread
- Proportional Approval Voting: Sweden, 1907-1925
- Reweighted Range Voting (PAV with Score voting):
Berkeley project prioritization



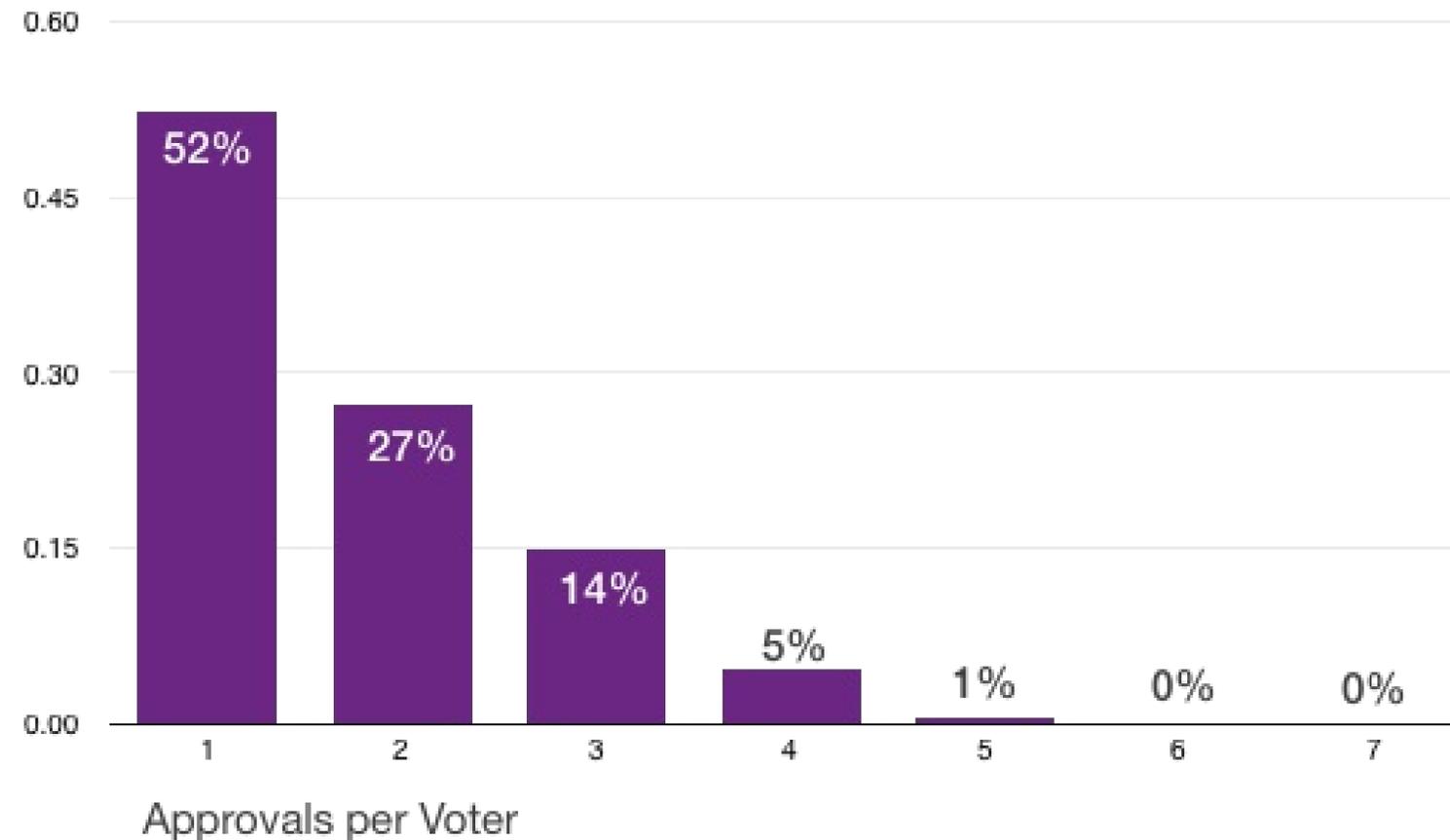
Approval voting criticisms

- What if people "bullet vote" (vote for just one) anyway?
 - Experience from November, from France and Germany, suggest not a problem
 - Simulations suggest that if up to 70% of the electorate bullet votes, it actually improves the outcomes
- Voting for 2nd choice can help achieve unifying compromises
- In IRV, voting for 1st choice can hurt them!
- In IRV, 2nd choices sometimes completely ignored until they are eliminated

Approving Multiple Candidates

- CES and GfK: major poll in November using Approval, IRV, Plurality, Score etc

Approval Counts (9 Way)



Summary

- Approval voting: good, simple fix
 - Use with current ballots, current equipment
- With bigger ballots: 3-2-1 or Score Runoff Voting
- Instant-Runoff voting is better than Choose-One Plurality
- Use Proportional Representation for council, legislature

For more information

- [Center for Election Science: electology.org](http://electology.org)
- [Approval Voting for Colorado](#)

Supplemental slides

Approval Voting over Instant-Runoff Voting

- Better Voter Satisfaction
- Less confusing
- Always makes sense to support your favorite
- Easy to use with current equipment
- Transparent
- Easy to tally
- Efficient to audit

Instant-Runoff Voting

- Beware variety of terminology
 - Ranked Choice Voting
 - Alternative vote
 - Transferable vote
- Ballot design complications
- Many of people's preferences are never considered
- Most voter preferences aren't reported, or reflected in even the complicated run-off round details
- Hard to understand
- [Maine's Ranked Choice Voting: It's Not Plurality | The Center for Election Science](#)
- Hard to audit IRV

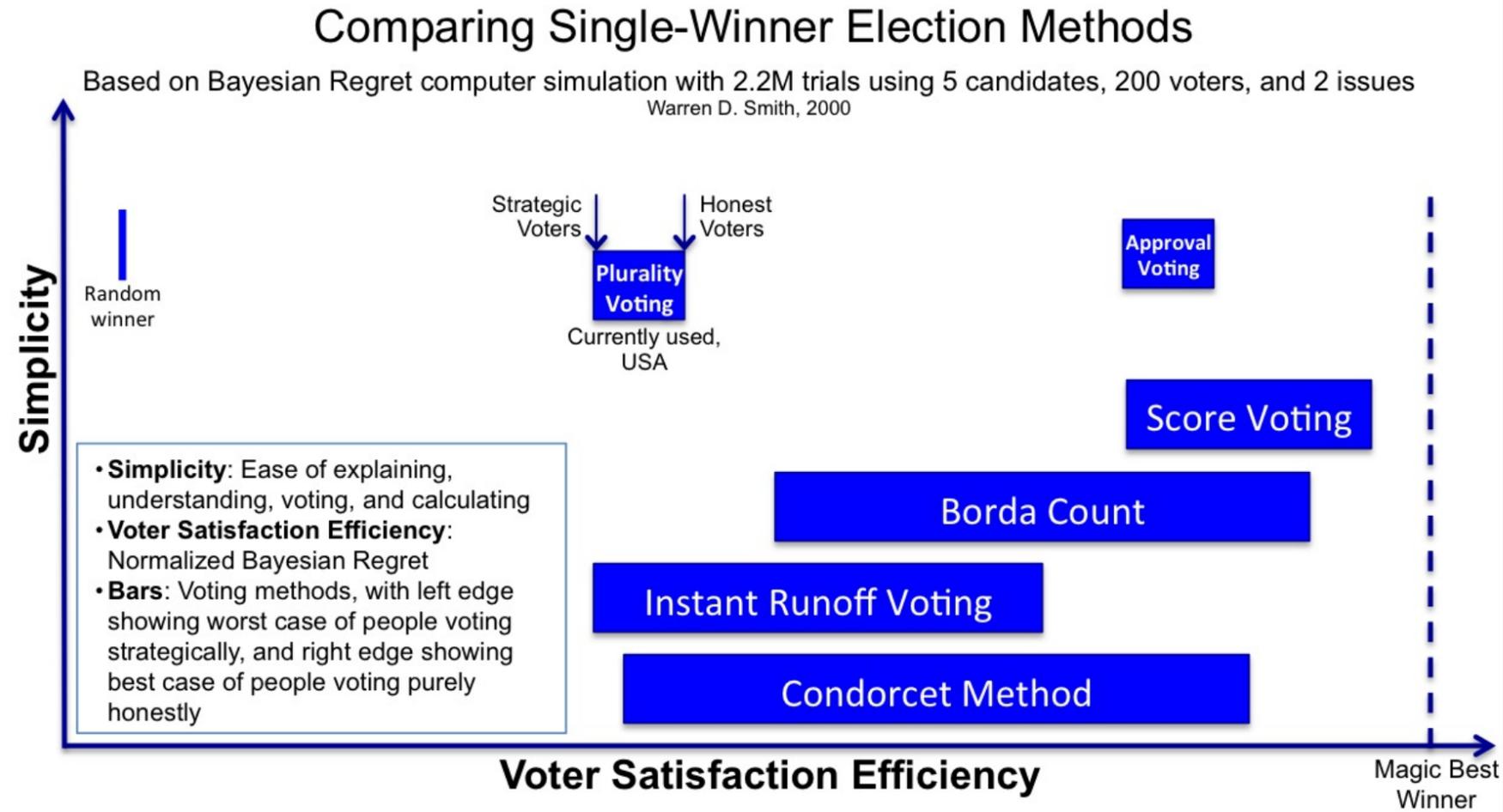
Instant-Runoff has been Rejected or Repealed

- Fort Collins (2011)
- Aspen (2010)
- Burlington, Vermont (2010)
- Cary, North Carolina (2009)
- Pierce County, Washington (2009)
- Ann Arbor, Michigan (1976)

Other Ranked Choice Voting methods

- Any Condorcet method
 - Ranked Pairs
 - Schulze, aka Beatpath
 - Game Theory (Rivest and Shen)
- Bucklin: accumulate top ranks until majority
 - Invented in Grand Junction CO

Effectiveness of Different Voting Systems



Warren Smith simulations, 2000

"One Person One Vote"

- The phrase "one person one vote" is about franchise to vote, and voter registration, not about method of voting
- History is different in Europe vs US
- In Europe: refers to goal: involve everyone in election - not just property owners
 - Don't allow people with property in multiple places to vote multiple times
- In US: refers to redistricting
 - Supreme Court requires redistricting to achieve one person one vote in state and local elections
 - Note: President and US Senate are not one person one vote. Voters in small states have more influence