

Accurate Democracy



4 *Decision Tools,*
with Pictures & Games



“This is *the* site for learning about democracy.”¹

“A huge contribution to the democracy cause.”²

See How

The best voting rules are fast, easy and fair.

They help groups from classrooms to countries.

The results are well centered and widely popular.

They strengthen the votes supporting



one chairperson or policy and

fair-shares of seats or \$pending.



Then Act

Share this illustrated booklet with a friend.

Build support in your school, club or town with

FairVote, The Center for Voting and Democracy.



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Three ways to learn **four** decision tools

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I. Voting Primer

Tragedies of Democracy

Old ways of adding up votes fail to represent large groups in many places. In the USA, North Carolina had enough black voters to fill up two election districts. But they were a minority spread out over eight districts. So for over 100 years, they won no voice in Congress. As voters, they were silenced.¹

The Northwest was ripped apart for many years as forestry policies were reversed again and again. Hasty logging in times of weak regulation wasted resources. Sudden limits on logging bankrupted some workers and small businesses. The **policy pendulum** swings; it cuts down forests and species, families and towns.²



What happens when the pendulum swings?

What's Wrong

We all know how a group can vote on a simple issue: A question with only two answers is voted 'yes' or 'no'. For such a question, the yes and no votes are enough.

But as soon as three candidates run for one office, the situation becomes more complicated. Then that old 'yea' or 'nay' type of voting is no longer suitable.³

It's even worse at giving fair shares of council seats, adjusting many budgets, or finding a balanced policy. Our **faulty voting rules** come from a failure to see this:

*There are different uses for voting,
and some need different types of voting.*

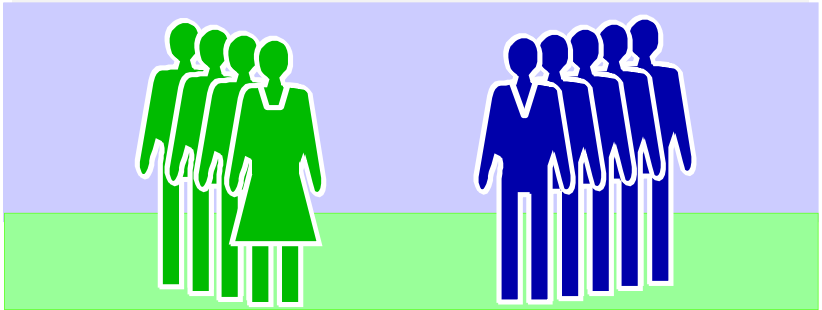


Will their votes have any effect?

Eras, Rules and Councils

In the 19th Century

Winner-Take-All Districts = Off-Center Councils



\$\$\$ Policies \$\$\$

Typical Council Elected By Plurality Rule

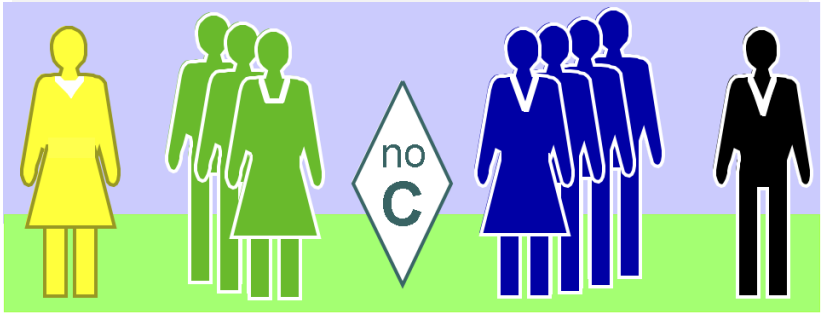
Some English-speaking countries still count votes by England's old **plurality rule**. It elects only one rep from a district; and winning it does not require a majority. It merely elects the one who gets the most 'yes' votes.

Only the biggest group wins, so only the two biggest have good chances.⁴ Even worse: a district's bias often makes it a 'safe seat' for *one* group. So the voters are given either a very limited choice or **no real choice**.⁵

A few who do get choices can make a council swerve from side to side. Its majority (the **blue reps** ↑ above) sets all policies — another battle of **winner takes all**.

In the 20th Century

Fair-Share Elections = One-Sided Majorities



\$ \$ \$ Policies \$ \$ \$

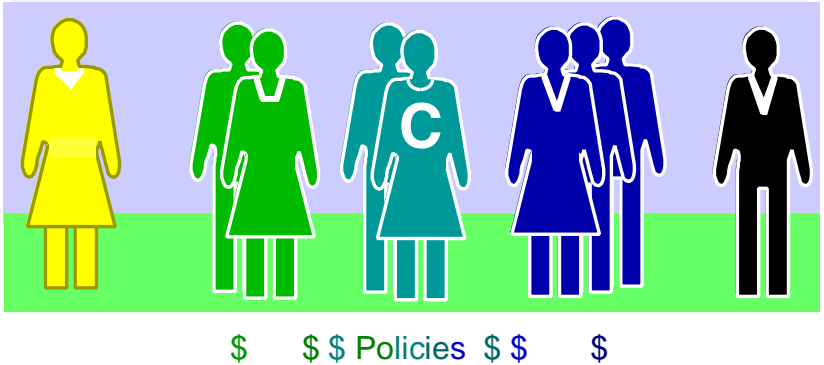
Typical Council Elected By Fair Representation

Fair Representation was developed around 1900 to end some major problems caused by plurality rule. Most democracies now use “Fair Rep”. It elects several reps from each election district. It gives a group that earns say, 20% of the votes, 20% of the council seats. So Fair Rep delivers **fair shares** of representation.⁶ It's often called Proportional Representation or PR.

It leads to broad representation of issues and views. But usually there is no central party (C above) and the two biggest parties normally refuse to work together. So the side with the most seats forms a ruling majority. Then they enact **policies skewed toward their side**.

In the 21st Century

Ensemble Councils = Balanced Majorities



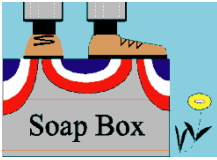
Council Elected By Central And Fair-Share Rules

Ensemble rules will elect most reps by Fair Representation, plus a few by a central rule (**C** above). Later pages show how a central rule picks winners with *wide appeal* and views near the middle of the voters. Winners are thus near the middle of a Fair Rep council.

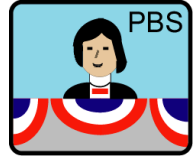
So they are the council's **powerful swing votes**.

Most voters in that *wide base* of support don't want averaged or centrist policies. They want policies to **combine the best suggestions from all groups**.

(Even an assembly⁷ chosen by lot might use these rules to center and balance a subcommittee.)



Progress of Democracy



A centrist policy enacts a narrow point of view; it excludes other opinions and needs. A one-sided policy also ignores rival ideas.

A compromise policy tries to negotiate rival plans; but contrary plans forced together often work poorly.

A balanced policy unites compatible ideas from all sides. This process needs advocates for diverse ideas. And more than that, it **needs powerful moderators.**

A broad, balanced majority works to enact broad, balanced policies. These tend to give the greatest chance for happiness to the greatest number of people.

Excellent policies are a goal of accurate democracy. Their success is *measured* in a typical voter's income and education, freedom and safety, health and leisure.⁸

Older rules often skew results and hurt democracy. An ensemble is **inclusive**, yet **centered** and **decisive**, to make the council **popular**, yet **stable** and **quick**. We'll see these qualities again in the best ways to set budgets and policies.

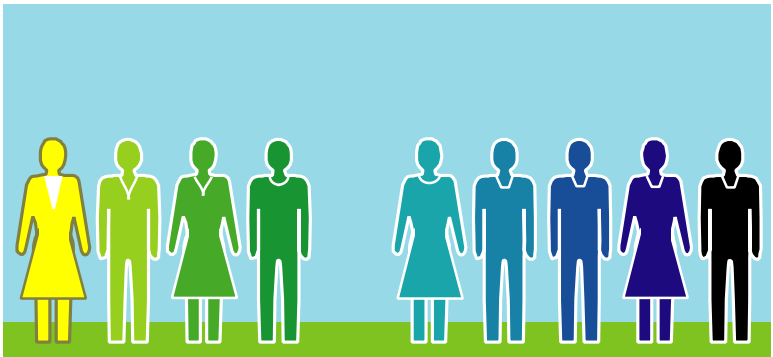
Electing a Leader

Nine Voters

Let's think about an election with nine voters whose opinions range from left to right. The figures in this picture mark the positions of voters on the political left, right or center. It is as though we asked them, "If you want high-quality public services and taxes like Sweden or Denmark, please stand here. Like Canada? Stand here please. Like the USA? Stand here. Stand over there for Mexico's low taxes and government."

Throughout this booklet, we're going to show political positions in this compelling graphical way.

Nine voters spread out along an issue.



High taxes buying
great gov. services

Low taxes buying
poor gov. services

Plurality Election

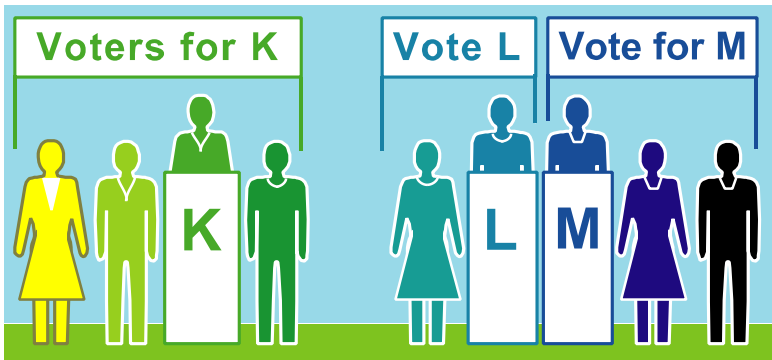
Three candidates stand for office. A voter likes the one whose political position is nearest. So voters on the left favor the candidate on the left.

Ms. **K** is the candidate nearest four voters. **L** is nearest two and **M** is nearest three. Candidates **L** and **M** **split** the voters on the right.

Does a majority (over half) elect one?	Yes, No
Who gets the plurality or largest share?	K , L , M
Who gets the second-largest share of votes?	K , L , M

A mere plurality gives the winner a weak **mandate**. That is the authority voters give to winners.

By plurality rule, the one with the most votes wins.



K is nearest four voters.

M is nearest three.

L is nearest two.

Runoff Election

Who wins a runoff between the top two?

K, M

The two (teal) who had voted for L now vote for M.

Do votes that move count more than others? Yes, No

This winner has the power of a majority mandate.

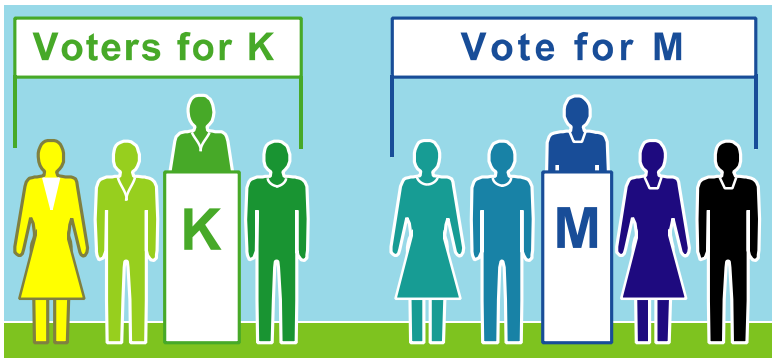
Only four **“wasted votes”** fail to elect anyone.

Did the plurality election waste more votes? Yes, No

Runoffs practically ask, “Which side is stronger?”

(Later, these voters will use another voting rule to see, “Where is our center?” And a bigger group will use a rule to find out, “Which trio best represents all of us?”)

In a runoff, the top two compete one against one.



Candidate M wins the runoff.

Politics in Two Issue Dimensions

Voting rules behave the same even when opinions do not fall neatly along a line from left to right.⁹

This photo shows voters choosing positions across two issue dimensions: left to right plus up and down. A person's position on the first issue does not help us guess their position on an independent issue.

“Please step forward for more regulation of ____.
Please step back if you want less regulation.
Take more steps for more change.”

Which leaves more wasted votes, plurality or runoff?
Which gives the winner a stronger electoral mandate?

Seventeen voters take positions on two issues:
more or less regulation \updownarrow and taxes for services \leftrightarrow



Kay wins a plurality. Em wins a runoff.

The goal of **Instant Runoff Voting** is this:

**A majority winner,
from a single election.**

How does it work? You **rank** your favorite as first choice, and your backups as second choice, third, etc. Then your ballot goes to your first-rank candidate.

If no candidate gets a majority, the one with fewest ballots loses. Then there is another round of counting.

Your ballot stays with your favorite if she advances.

It moves to your backup if your favorite has lost.

This repeats until one candidate gets a **majority**.

Benefits of Instant Runoff Voting (IRV)

- **A majority winner** from one election, so no winners with weak mandates and no costly runoff elections.
- **Higher voter turnout**, it often drops in runoffs.¹
- **Less divisive campaigns**, as a candidate tells rival factions why she is their best backup choice.²
- **No hurting your first choice** by ranking a backup, as it does not count unless your first choice has lost.
- **No lesser-of-two-evils** choice, as you can mark your true first choice without fear of wasting your vote.
- **No split-vote** worries for a faction as votes for its weakest candidate move to each voter's backup.

Instant Runoff Voting Patterns

In a South Korean presidential election, two liberals faced the aide to a military dictator. The liberals got a majority of the votes but split their supporters. So the conservative won under a **plurality** rule. These rules elect whoever gets the most votes; 50% is not required.

The winner claimed a mandate to continue repressive policies. Years later he was convicted of treason in the tragic killing of pro-democracy demonstrators.³

With Instant Runoff Voting, ballots for the weaker liberal could move to help elect the stronger one.

From five factions to one majority.



- 1) Ms. **Violet** loses. Her ballots go to each **voter's** next choice.
 - 2) Ms. **Blonde** loses. Her ballots move.
 - 3) Ms. **Green** loses.
 - 4) Ms. **Carmine** loses.
- The games will show each ballot moving.

IRV elects leaders in more and more cities: London, Melbourne, Minneapolis, San Francisco and others. Students use it at Duke, Harvard, Stanford, Rice, Tufts, MIT, Cal Tech, Carlton, Clark, Hendrix, Reed, Vassar, The Universities of: CA, IL, MD, MN, OK, VA, WA, ...

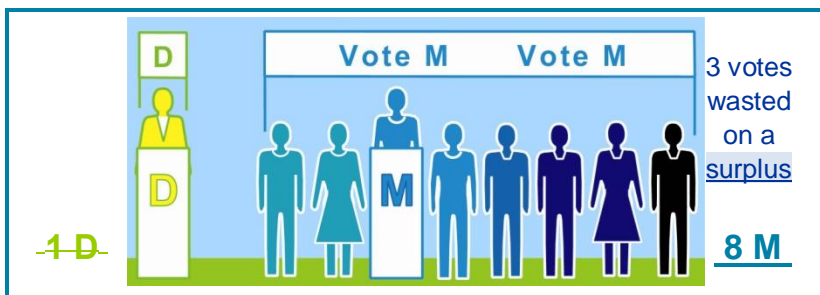
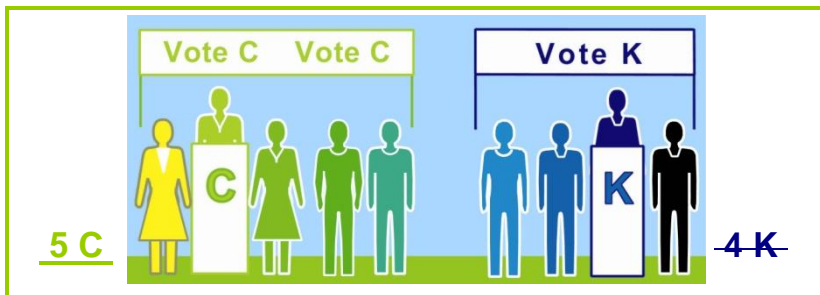
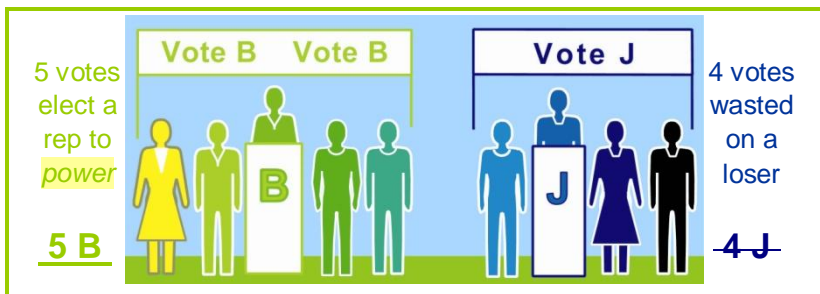
IRV lets you vote for the candidate you really like. And even if that option loses, your vote isn't wasted; it goes to your next choice.

Electing a Council

Single-Member District Elections

A class of 27 wants to elect a planning committee. Someone says, "Elect a rep from each seminar group."

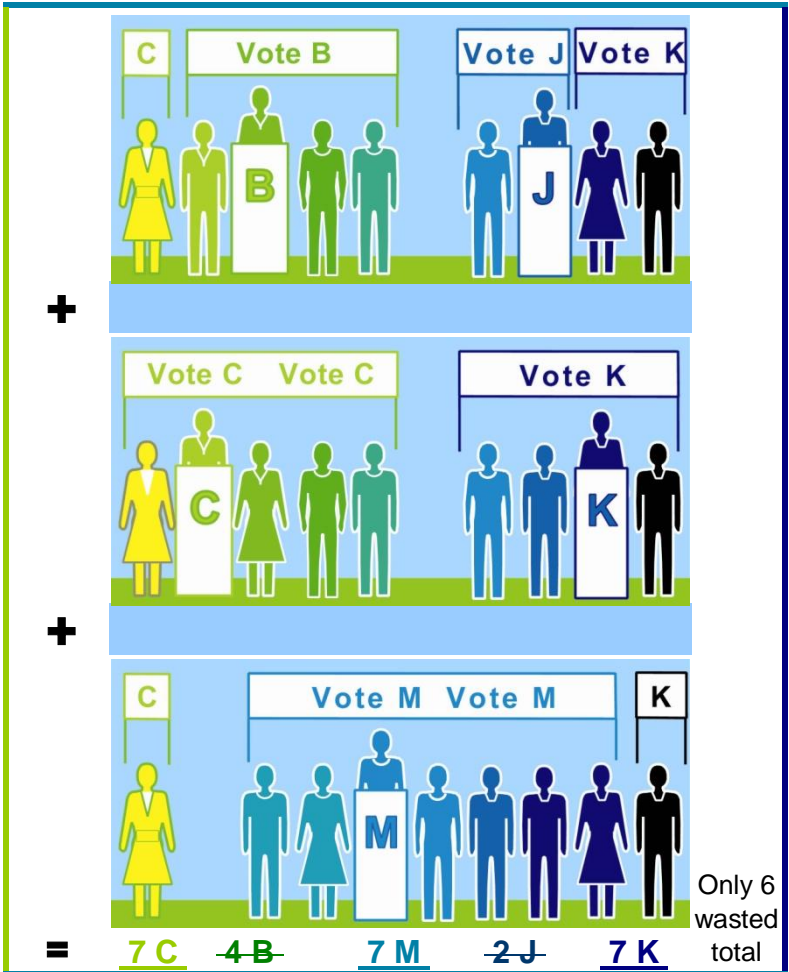
5 votes elect B in this top group as J gets only 4.



A minority with 11 voters gets majority power, with 2 reps. (But if it were spread out evenly, it would get none.)

Fair Representation Election

A better suggestion says, "Keep the class whole. Change the definition of victory from half of a small seminar to a quarter of the whole class plus one." So three reps need 3/4 of the votes. More effective votes make a stronger **mandate** for council decisions.



Now a majority gets 2 reps and a minority gets 1.

The principle of **Fair Representation** is:
**Majority rule, with representation
for political minorities,
in proportion to their votes.**

That is, **60% of the vote gets you 60% of the seats**, not all of them. And 10% of the vote gets you 10% of the seats, not none of them. These are **fair shares**.

How does it work? There are three basic ingredients:

- 🌈 We elect more than one rep from each district.
- 🌈 You vote for more than one; you vote for a list. You pick a party's list, or you list your favorites.
- 🌈 The more votes a list gets, the more reps it elects.

Benefits of Fair Representation (Fair Rep)

- 🌈 **Fair shares** of reps go to the competing groups, so **Diverse candidates** get a real chance of winning. so **Close races** for swing seats are on most ballots, so **Real choices** for a voter and high **voter turnout**.¹
- 🌈 **Women** get elected about three times more often.² so **Majority rule** improves – also by few wasted votes, real choices, turnout and reps with equal support. so **Policies match** public opinion better.³

Fair Shares and Moderates

Chicago elects no Republicans to the State Congress, even though they win up to a third of the city's votes. But for over a century it elected reps from both parties. The state used a fair rule to elect 3 reps in each district. Most gave the majority party 2 reps and the minority 1; so both parties courted voters in all districts.

Those Chicago Republicans were usually moderates. So were Democratic reps from Republican strongholds. Even the biggest party in a district tended to elect more **independent**-minded reps. They could work together and make state policies more moderate.⁴



✓ Shares of votes equal fair shares of seats.

New Zealand switched in 1996 from Single-Member Districts to a layer of SMDs within Fair Representation. This is called Mixed-Member Proportional or MMP. A small, one-seat district focuses more on local issues. Fair Rep frees us to elect reps with widespread appeal.

The seats won by women rose from 21% to 29%. The native Maoris reps increased from 7% to 16%, which is almost proportional to the Maori population.⁵ Voters also elected 3 Polynesian reps and 1 Asian rep.

Why Elect Women

Does Fair Representation elect more women?

New Zealand and Germany elect half of their MPs in single-member districts and half from Fair Rep lists. The SMDs elect few women; but in the same election, the party lists elect three times more women.

In every one-seat district, a party's safest nominee is likely to be a member of the dominant sex, race, etc. That adds up to very poor representation of all others.

Fair Rep leads a party to nominate a **balanced team** of candidates to attract voters. This promotes women.⁶ A team can have class, ethnic and religious diversity. And that gives us diverse reps to approach for help.

*more: competition, real choices,
effective votes, voter turnout,
diverse reps, women reps,
stronger mandates, fitting policies*

Some leading women spoke of **starting a new party** in **Sweden**, which uses Fair Rep. Under plurality rule, a big new party splits their own side, so it loses. But Fair Rep gives every big party its share of seats.

This credible threat made some parties decide that job experience was not as important as gender balance. So they dropped some experienced men to make more room for women on the party list. And they won.⁷ Now they are incumbents with experience, power and allies.

Voting Rules and Policy Results

A woman in a multi-winner race is not so much running against a man or an incumbent. She is more often seen as running **for her issues**. Also, most “women prefer to compete in teams,” not solo.⁸

SMDs elect reps with a wide range of vote totals. But Fair Rep requires the same total for each rep. So any majority of reps really stands for most voters. That helps policies match public opinion better.³

~~less: wasted votes,
gerrymandered districts,
monopoly politics,
dubious democracy~~

Consequences: Legislatures with fewer women tend to give less attention to health care, child care, education and other social needs. Run-down schools and city hospitals are one blight; a class of citizens with inferior education and health are another.⁹

If those urgent needs overwhelm us, we neglect the essential needs, the **structural roots** of our problems. We often get bad results from poor policies due to poor representation growing out of inapt voting rules.

The countries with the best voting rules have the best **quality of life**, as measured in the scores on page 58. Wouldn't you like the best results for your country? (and for your town, school, club or company?)

Setting Budgets

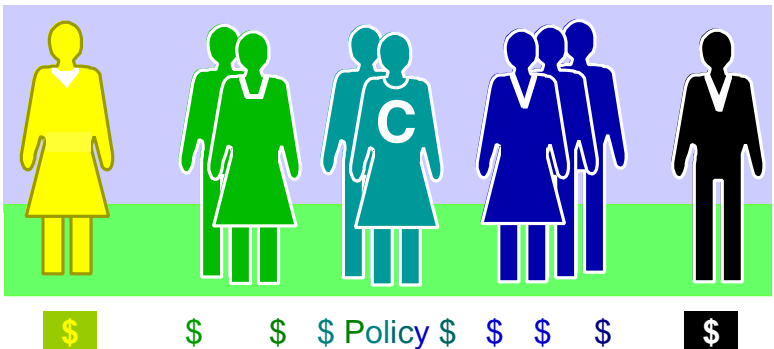
Fair Shares to Buy Public Goods

Electing reps is the most obvious use of voting rules. Rules to set policies and budgets are just as important. In fact, they get used more often than election rules.

Fair Representation distributes council seats **fairly**. Voting can also distribute some spending power **fairly**.

Democratic rights progress: Each step makes a democracy more fair, thus accurate, popular and strong.

- ✓ Voting by rich men, poor men, colored men, women
- 🇺🇸 Fair representation of large political minorities
- 🇺🇸 Fair-share spending by big groups of voters or reps.



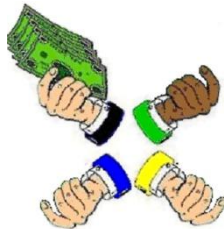
Fair shares give minority voters some power.

Patterns of Unfair Spending

Participatory Budgeting, PB, lets neighbors research, discuss and vote how to spend part of a city's budget. It's a big step up for democracy. In South America, it spread from one city in 1989 to several hundred today. The World Bank reports that PB tends to raise a city's health and education while cutting corruption.¹

A top Chicago alderman first gave his discretionary fund to PB in 2010. But a plurality rule made the votes and voters unequal. A vote for a park was worth \$501. But if given to fund bike racks, it was worth only \$31. That's too unfair. Even worse, more than half the votes were wasted on losers.²

**A costly winner
makes many
lose.**



A bad election rule gets worse when setting budgets. It is **not cost aware**; so it often funds a very costly item and cuts a bunch that get many more votes per dollar. To win this bad tally, load various proposals into one. Keep raising its cost if that attracts more votes.

One year, a scholarship fund got many **surplus votes**. These were wasted votes because they had no effect. So the next year, some supporters chose not to waste a vote on this "sure winner." It lost! They saw the need for a voting rule that would not waste surplus votes.³




The principle of **Fair-share Spending** is:
**Spending power for all,
in proportion to their votes.**

That is, 60% of the voters spend 60% of the money, not all of it. **A project must prove it's a common good worth group funds, by getting grants from many voters.** So we let a voter fund only a small share of a project.

How does it work? Like IRV: you rank your choices.

Then your ballot gives grants to your top choices. And a tally of all ballots drops the least-funded project. This repeats 'til all still in the race are fully funded.⁴

Some Merits of Fair-share Spending (FS)

-  **FS is fair** to a project of any price, and to its voters: It takes a costly grant to vote for a costly project. Your ballot's money can help more small projects.
-  A fair, cost-aware tally buys **the most joy per dollar**: Your ballot helps buy your choices. This motivates you to cast a ballot, and to vote for lean projects.
-  **Votes can move** from losers to backup choices. so: Voters split by similar proposals can **unite** on one. The set of winners gets **stronger support**.

Fair-share Spending Works This Way

In a citywide vote, each **neighborhood** or interest group funds a few school, park or road improvements. The city's taxes then pay for the projects as the School, Park and Road Departments manage the contracts.

If a majority spends all the money, the last thing they buy adds little to their **happiness**. It is a low priority. But that money could buy the high-priority favorite of a big minority; it could make them happier.



✓ **Fair shares**
spread the joy and opportunities.

In economic terms: The *social utility* of money and goods tends to rise if we each allocate a share. Shares spread the opportunities and incentives too.

In political terms: Fair shares earn wide respect, as we each help big minorities to fund some projects. So the budget appeals to more people.

Each big group controls its share of an FS fund. This cuts the ability and the incentive for a group to dominate others.

Adjusting Budgets

I may write-in and rank **budget levels** for an item. My ballot may pay only one share of a budget level. Often, it can afford to help most of my favorite items.

A budget level needs to get a **base** number of votes. It gets a vote when a ballot pays a share of the cost up to that level or higher. $\text{cost} / \text{base} = 1 \text{ share} = 1 \text{ vote}$. If more ballots divide the cost, each of them pays less. I only pay up to a level I voted for and can afford.⁵

The item with the weakest top level, loses that level. Any money I gave it flows to my highest rank that lacks my money. This repeats until the top level of each item is fully funded, by its large base of support.






**A large base of support must agree,
this item is a high priority for our money.**

A group with 100 members set our **base** number at 25 votes.⁶ My first choice got just enough votes, so my ballot paid 4% of the cost. $100\% / 25 \text{ voters} = 4\%$.

My second choice lost; did it waste any of my power? My third choice got 50 votes, so I paid only 2% of the cost, a half vote. Were there any surplus votes? Did I waste much power by voting for this sure winner?





None. None. Not much.

More Merits of Fair-share Spending

-  **Fairness builds trust** in group spending, which can raise support for more of it. This can cut spending at the extremes of individual and central control.
-  After discussion, one poll **quickly** sets many budgets. It reduces **agenda** effects such as leaving no money for the last items or going into debt for them.
-  It does not give minorities too much **power**:
A majority spends most of any fair-share fund.
They set the policies that direct each department.



Merits of FS for an Elected Council

-  Voters can see a rep's grants to each program, tax cut or debt reduction and hold her **accountable**.
-  FS gives some power to reps in the opposition. so
Votes to elect them no longer feel like wasted votes.
-  It smoothes budget roller-coasters that hurt **efficiency**.
It stops starvation budgets designed to cause failure.
-  It lets sub-groups pick projects; so it's **like federalism**
but without new layers of laws, taxes and bureaucracy.
And it funds a big group even if they're scattered.

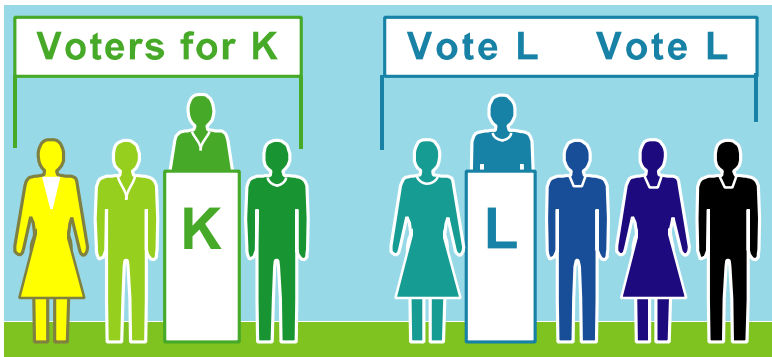
Enacting a Policy

Condorcet Test Number Two

The Runoff on page 10 was a one-against-one contest between the positions of candidates **M** and **K**. Five voters preferred **M's** policy position to **K's**.

Here is a second test with the same voters:
K's position loses this one-against-one test.
L wins by five votes to four.

Each person votes once with a ranked-choice ballot; pages 31 and 43 will show two styles. The workshop will show a table to record a Condorcet tally.



K is nearest four voters.

L is nearest five voters.

Condorcet Test Number Three

Candidate **L** wins her next one-on-one test also. She even got one “surplus vote” more than needed.

She has won majorities against each of her rivals. So her position is the “**Condorcet winner**”, the one policy judged to be best by *every* majority of voters.

Could another person top candidate **L**? Yes, No

Hint: Is anyone closer to the political center? Yes, No

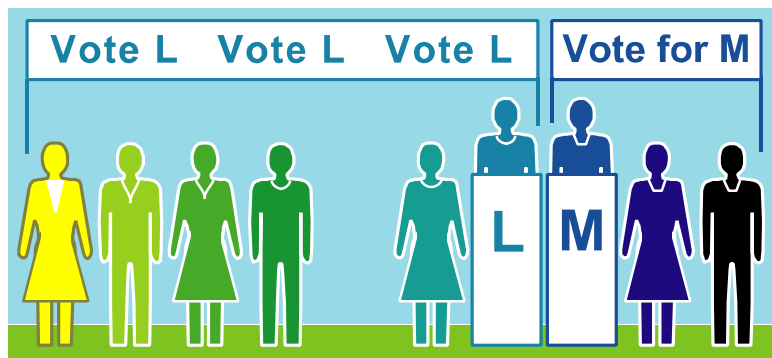
Who is the Condorcet winner on page 11? **K, L, M**

Thus a Condorcet Tally elects a **central winner**:

It can set the 'base of support' in **FS**. page 24

It can elect a **moderator** to a council. page 6

But is it likely to elect diverse reps? Yes, No



L has six votes.

M has three.

Yes, Yes, L, No.

The goal in a **Condorcet Tally** is this:

**Majority victories,
over every single rival.**

The winner must top every rival, **one-against-one**.

The sports analogy is a “round-robin tournament.”
A player has one contest with each rival.
If she wins all her tests, she wins the tournament.

Each voting test sorts all of the ballots into two piles.
If you rank option J higher than D, your ballot goes to J.
The one which gets the most ballots wins this test.
If one wins all its tests, it wins the Condorcet Tally.
(If none does, IRV can elect one of the near winners.¹)

Benefits of a Condorcet Tally (CT)

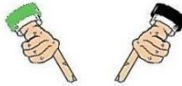
- ✚ **No split-vote** worries as duplicates don't help or hurt each other.¹ The ad hoc majority ranks *all* of their favorites over other motions. Their top one wins.
- ✚ **Rank-choice ballots** poll related motions all at once. They **simplify** the rules of order and **speed up** voting. They reduce hidden votes and **agenda** effects, from simple errors to killer and free rider amendments.
- ✚ A **balanced process** tends to be **stable** and decisive. Yet it also calms fear of discussing further **changes**. All this saves money and builds respect for leaders.

Policies with Wide Appeal

A plurality or runoff winner gets no votes from the losing side and doesn't need to please those voters. But a CT candidate seeks support from all sides, because every voter can rank it against its close rivals. Thus every voter is “obtainable” and valuable.

So the winner is well balanced and widely popular.² Voters on the **center and right** give it a majority over any **left-wing** policy. At the same time, voters on the **center and left** like it more than any **right-wing** policy. **All sides** like it more than a narrowly-**centrist** policy.

“Our center is near me.”



“I think it's right here.”



“I am the center!”



✓ Where is our center?

Chairs with Balanced Support

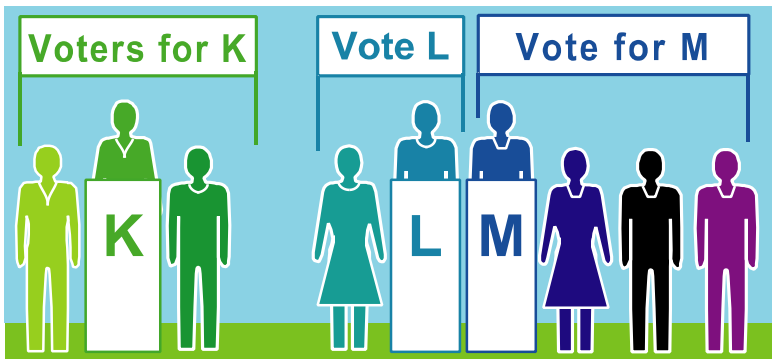
CT elects a central chairperson and vice chair to hold the powerful swing votes on an **Ensemble Council**. As shown on page 54, they compete for support from voters left, right and center. So they have strong incentives to balance a council's process and policies.

Proposed policies compete for high ranks from all members, but the chairs often cast the key votes.

Resist Rigged Votes

Candidate **M** lost the last election by plurality rule. Now let's say her party **gerrymanders** the borders of her election district. They add neighbors (**purple** below) who tend to vote for her party, and exclude less favorable voters (the yellow voter missing on the left). So now the new district is a "safe seat" for her party. Might her party caucus pick someone less moderate?³

The old **plurality** rule was easy to manipulate. (Borda and point voting are often susceptible too.)² But the **Condorcet** winner, **L**, doesn't change here. **Fair Rep** cuts the number and influence of districts.⁴



Now K has three. L has two. And M has four votes.

Bribes can make some reps switch sides on a policy. **Condorcet** resists this well. Bribing one rep moves the council's middle, and its winning policy, only a little. This also cuts the payoff to a big campaign sponsor. **Fair-shares** and visible grants also restrain corruption.

Yes.

Unstack the Agenda

Some meetings concoct a policy by a series of yes-no choices, with or without rules of order, agendas or votes. An early proposal might have to beat each later one. An early decision might shut out some later options. So “stacking the agenda” can help or hurt some options.

Other meetings discuss rival options all at once; yet many people don't express their backup choices. So similar options split supporters and hurt each other. Then a minority pushing one option can appear to be the strongest group. Even worse, a person with a well-balanced option but few eager supporters might drop it.

Committees sometimes choose parts of a policy. They might allow other voters only a yes-or-no choice.

Rigged votes often build bad policy and animosity. To reduce these risks, let the voters rank more options.⁵

Bob's Ballot

<u>Rank</u>	<u>Option</u>
<u>2</u>	Original Bill, the main motion
<u>1</u>	Bill with Amendment 1 (a free-rider?)
<u>7</u>	Bill with Amend. 2 (a killer amend.?)
<u>6</u>	Bill with Amendments 1 and 2
<u>3</u>	Postpone for <u>1</u> days
<u>4</u>	Refer the Bill to a Committee
<u>5</u>	No Change in the status quo

Costs and Benefits

Steering Analogy

When choosing a voting rule, a new Mercedes **costs** little more than an old jalopy. That price is a bargain when the votes steer important budgets or policies.

Does your car have an 1890 steering tiller or a **new**, power steering wheel? Does your organization have an 1890 voting rule or a new, centrally balanced rule?



Today's drivers need the **skill** to use power steering, but they don't need the math or logic to engineer it. Same with voters and voting rules.

It's easy to **test**-drive a new rule in a **survey**. Or a council can form a **"committee of the whole"** to vote, tally and report results to enact by old yes-or-no rules.

Many groups **adopt** a book of parliamentary rules, then amend it with their own **"special rules of order"** to make their decisions more popular, stable and quick.¹

Tools Between People

Voting rules affect our laws – and our views on life. By making us give either fair shares or winner take all, rules shape how we treat each other and see our world. The official rules model the goals for shared decisions. They teach some patterns often followed by coworkers, friends and neighbors.

Fair rules make **cooperation** safer, faster and easier. This favors people and groups who tend to cooperate, and can lead others to cooperate more often.



Politics are more **principled** and peaceful when all the rules help us find fair shares and central majorities. These may reduce political wars and fears in a group, leading it to embrace more freedom and diversity.

So better rules can help us build better decisions, plus better relationships. Both can please more people. Someone whose income or self-worth comes from war-like politics might not be pleased. But fair rules are very likely to raise happiness on the whole.² Voting is an exemplary “tool between people.”

Voting Helps Related Reforms

Accurate voting rules help all of these reforms:

A news firm might inform us better if it is ruled by voting subscribers more than investors or advertisers. VoterMedia.org has a low-cost method for any group: Use **FS** votes to reward the best local-news bloggers.

Public campaign funding lets reps and rivals give less time to their sponsors, more time to their voters. One plan gives each voter \$50 of vouchers to donate.³ Such nameless gifts or **FS** may cut corrupt paybacks. Sponsors aim their \$ to buy the few swing-seat SMDs. That's harder for them in **IRV** or **Fair Rep** districts.

Ecosystem feedback to reps depends largely on news, sponsors, and voting.

Ballot access laws make it hard for small parties to get on the ballot — because big parties fear “spoilers”. Good voting rules such as **IRV** can calm that fear.

Sabbatical terms make the current rep run against a former rep returning from sabbatical. The voters get a real choice between two winners with actual records! Good rules do not hurt a party with extra nominees.

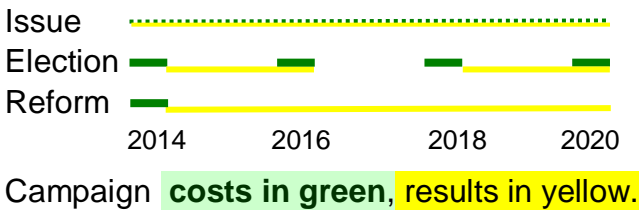
Citizens' assemblies⁴ and referenda can get better choices and control by using ranked-choice ballots and **Condorcet Tallies**. They ought to enact the laws on which all reps have a conflict of interest, such as the laws about campaign funds, ads, gifts and pay for reps.

Voting Reform Is Cost Effective

Issue campaigns lobby reps every week for years. This eases one problem, but rarely fixes the source.

Election campaigns cost a lot all at once. The biggest faction can skew all policies for a few years.

Reform campaigns cost no more than elections. A win strengthens reps and policies for many years.



Strengthen Votes and Mandates

Good voting rules help voters organize. They expand the base of power, the number of voters supporting:

- ✳️ a **Chairperson** from a plurality to a majority; page 29
- 🇺🇸 a **Council** from a plurality to over three quarters; 15
- 🇺🇸 a **Budget** from a few power blocs to all members; 22
- ✳️ a **Policy** from a one-sided to an over-all majority. 28

Votes for real choices tally up democratic power. It needs new strength to balance the powers based on military, money, or media. Better rules give stronger mandates and lead toward widely-shared goals.

Benefits to Voters and Reps

Accurate Elections

pages

- Give us **real choices** of candidates who might win, by electing **fair shares** of reps from all big groups. 14
- This supports a wide range of candidates, **debate** of issues and **turnout of voters**. 16 59
- Reduce **wasted votes** to end weak mandates. 10, 9, 14
Cut the effects of spoilers and **gerrymanders**. 12, 30
- Reduce **attack ads** and anger among voters. 12
Cut the **payoffs** to big campaign sponsors. 30



Accurate Legislation

pages

- Give fair representation to all big groups, so the council enacts laws for **real majorities**. 14 16, 19
- Elect a **central chair** whose **swing vote** pulls reps from many factions to moderate policies. 6 29
- Give members **fair-share spending** for optional budgets. Let voters see each rep's spending. 20 22
- Cut agenda **scams**; detach free-rider and killer amendments. Speed-rank all options at once. 28 31

This primer told the benefits of the best voting rules. Now voting games will show the simple steps in a tally.

II. Workshop Games

Get your hands on **4** great voting rules.

See fair-share tallies organize voters.

Vote fast on **reps**, **budgets** and **policies**.



A tallies board has

- 🌀 A **card** for each voter,
- 🌀 A **column** for each option,
- 🌀 A **finish line** for the favorites.

Instant Runoff Voting Elects One

For a tabletop tally with **Instant Runoff Voting** (IRV)

- The **finish line** is the height of half the cards, plus one. That is how many votes a candidate needs to win.
- If no one wins, **eliminate** the weakest candidate. Draw names from a hat to break ties.
- If your favorite loses, **move** your Post-it, card or token. Give it to your next backup choice.
- **Repeat** until one candidate reaches the finish line!



This **chart** shows four columns on a tally board. The rule **eliminated** Anna, so **voter JJ** moved his card. Then Bianca **lost**, so **BB** and **GG** moved their cards.

Anna Eliminated 1 st		Bianca Dropped 2 nd
		B B
J J		G G

Celia

IRV Winner

Diana

Runner up

Finish Line_ Finish Line_ Finish

B B

J J

M M

L L

V V

G G

D D

Z Z

C C

Instant Runoff Quiz




1. How can your group use this voting rule?
2. A card we move counts just like others: True, False
3. Ranking a backup choice can't hurt your 1st: T, F
4. Only one candidate can reach 50% plus a vote: T, F
5. Name four cities or schools that use IRV. page 13
6. What benefits does it give them? page 12

Answer questions 1, 2 and 3 for each voting rule.

- 2) *True, we count each card once in each round.*
- 3) *True, a backup doesn't count unless your 1st has lost.*
- 4) *True, two reps would need over 100% of the votes.*

Transferable Votes Electing 3 Reps

To elect 3 reps by **Single Transferable Vote** (STV)

-  The **finish line** is set at 1/4 of the cards plus one.
Don't put your card in a column that is full.
-  **Drop** the weakest candidates one at a time.
-  **Move** the cards until three candidates win!

STV is sometimes called “Ranked-Choice Voting.” It is **used in** many Australian and Irish elections, at MIT, Harvard, Oberlin, Berkeley, Oxford and Cambridge, in some labor unions and in the Church of England.

1. What benefits does Fair Rep by STV give them?
2. Can only 3 candidates each win 25% plus a vote?
3. What total percentage must three STV reps win?
4. What is the threshold for winning one of five seats?

Fair Shares Buy Public Goods

For a tabletop tally of **Fair-share Spending** (FS)

- Let's say we each put in \$1 to buy some treats. You get two 25¢ voting **cards** and a tall 50¢ card.
- We say an item needs modest support from 8 of us to prove it is a *public* good worth public money. So the **finish line** marks the height of 8 cards.
- You may put only one of your cards in a column. So you can't dump all your cards on a private item. Tip: Give your tall 50¢ card to your favorite. This way 4 eager voters can fund a low-cost item.



- A costly item must fill several **columns**. A column here holds \$2, so a \$4 item must fill two columns.
- When an item wins, the treasurer hides its cards. We **drop** items that cost more than all the cards left. Then one at a time, we drop the least popular item, with the lowest level of cards in its columns.
- Move** your card from a loser to your next choice. Tip: You may save a threatened favorite by briefly withholding your cards from lower-choice items.
- We **stop** when *all* items still on the table are paid up.
Only a few items can win, but all voters can win!

Fair Shares Set Budgets

Each **budget level** is like another project. It needs **cards** to fill its columns and pay its cost.

The “\$4 carton of OJ” has two **columns**. The “\$6 bottle of OJ” adds just one more column. Supporters must help fill the lower level first.

One at a time, the weakest top level loses and the money **moves**→ to help favorites still in the running.

The trick with treats is to divide the biggest group so they lose by plurality rule. Before votes transfer, the chocolates all lose, or at least show many wasted votes. The healthy apples win!



We can vote for a party menu, a dance play list, a ... Caution: long ballots lead some voters to give up. Great ballot design cuts voter errors and exhaustion.¹

1. Should we let each member fund private items?
2. Should a member who pays more taxes or dues get more power to spend the group's money?
3. Can ranking lower choices hurt your first choice?
4. Should we let everyone see grants made by reps?

No, it's public money. No. Optional. Yes.

Ranked-Choice Ballots

Only a small group can crowd around a tally board. Big groups use paper ballots, often tallied by computer. You print out, review, and cast your ballot. Then audits can catch ballot box or tally frauds and errors.²

Check mark ballots badly oversimplify most issues. The yes-or-no choice highlights only two big factions: “us versus them.” It can **polarize** and harden conflicts.

Ranked choice ballots reduce those problems. They let you rank your 1st choice, 2nd choice, 3rd etc. Ranks can reveal a great variety of opinions. Surveys find most voters like the **power** to rank candidates.³



Party Menu Fill only one “O” on each line.

Desserts	Ranks					
	Best 1 st	2 nd	3 rd	4 th	5 th	Worst 6 th
1 Fruit & Nut Platter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 Chocolate Brownies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 Choc. Chip Cookies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 Choc. Fudge FroYos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 " Cheesecake Slices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 Choc. Mousse Hearts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Condorcet Tally Centers a Policy

For a Condorcet tally, the winner must top all rivals, **one-against-one**. Two games show how it works.

1. 🌟🌟 Flag C stands at our **center**, by the median voter. Three flags surround C, about 5' from it.
🌟🌟 We ask: "Are you closer to flag A than flag B? If so, please raise a hand." Then A against C, etc. We put each total in the **Condorcet table** below.

against	A	B	C	D
for A	—	2	2	3
for B	5	—	2	3
for C	5	5	—	4
for D	4	4	3	—

C tops all rivals, one-against-one.

2. 🌟🌟 Flag C has a short **Red** ribbon and a long **Blue** one.
🌟🌟 If the **Red** ribbon gets to you, the **Red** policy gets your vote with its narrow appeal.
🌟🌟 But if the **Red** cannot touch you, the **wide appeal** of the **Blue** policy gets your vote. Which one wins?

If the flags mark places for a heater in an icy cold room:

1. Do we put it at our center or in the biggest group?
2. Do we turn on its fan to spread the heat wide?
3. Do voters on the fringes have any influence?
4. Can the median voter enact any policy alone?
5. Do we get a balanced or a one-sided policy?

Usually: Blue. Center. Yes. Yes. No. Balanced.

Workshop Finale and Notes

Our ballots from page 43 let us compare rules. Which 1 wins by plurality? Hints: 5 chocolates vs. 1 nut, and the first name on a ballot gets a 2% to 9% boost.⁴ Would a discussion make sugar fanatics cooperate?

Which dessert wins by Condorcet or by IRV? Which are the top 2 by those rules and by STV or FS? Which rule is best if the items vary in cost?

Suggested Discussion: Plan how to take a poll for the central majority or fair shares in a group you know. What qualities do you want in this voting rule? *Empowering, fair and easy for voters, i.e. strategy free.*⁵



Time: 40 voters take about 90 minutes to review what they know about voting, try IRV and STV, then try FS with 2 cards each. Nine voters with 5 cards each take about 20 minutes to fund 3 winners from a dozen items.

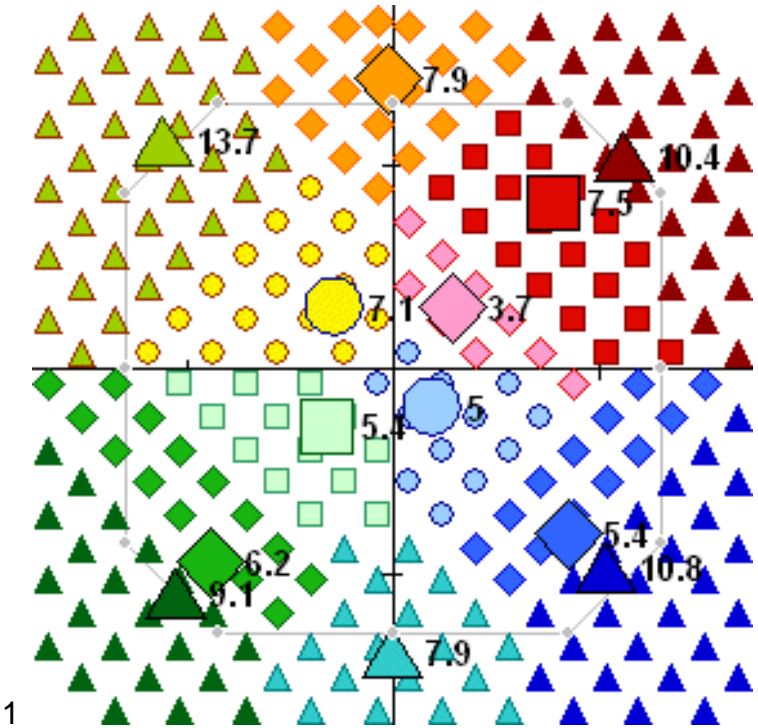
The primer and workshop webpages are a bit longer. A teacher's page has handouts, ballots and voting cards.

This hands-on game for loot to share creates vivid memories of how the tallies work. To see some more *effects* of tally rules, we can simulate many elections and compare the results of one rule with another.

III. SimElection Charts

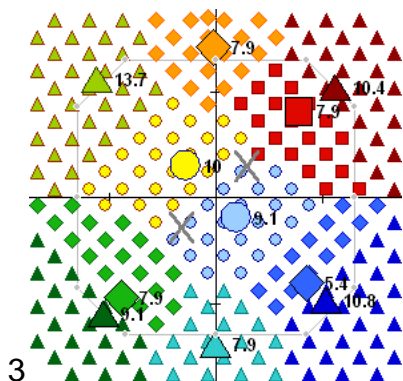
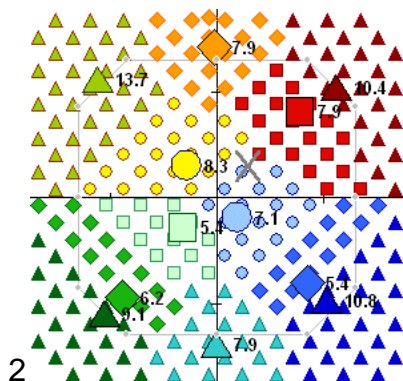
Watch STV Balance a Council

SimElection™ made these charts of an STV tally. The small shapes are voters; big ones are candidates. Each voter has the same color and shape as his current top choice, the closest remaining candidate.¹



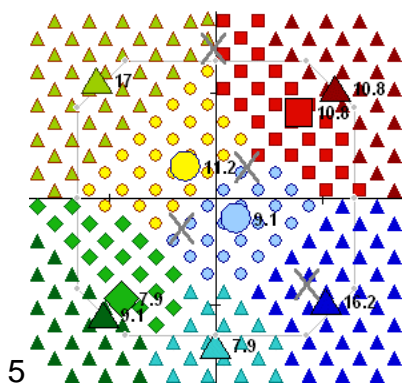
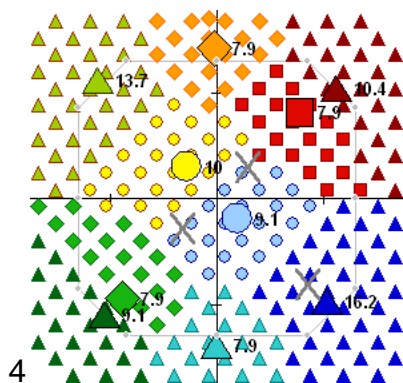
In chart 1, the first count shows each candidate's current share of the votes; 17% wins a seat and a halo! O After this round of counting, the weakest candidate will lose and get an X. Which will be the first to lose?

The Weakest Lose, One at a Time

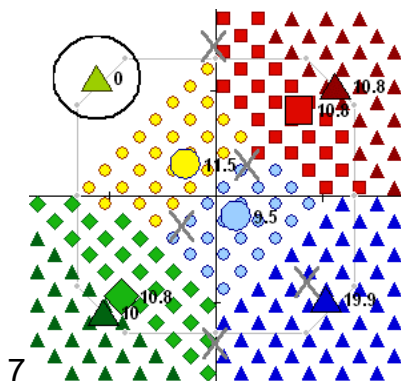
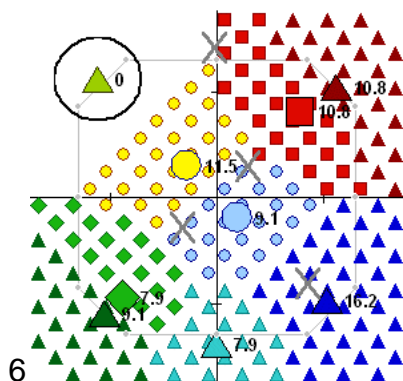


In chart 2, the first loser gets an X. Her voters change color as each **transfers** to his next choice, a similar candidate. So the nearest fields of color grow. ● ■ ●

In 1, the gray box holds half the voters. The candidates outside it lead their close rivals on the first ballot count. But in 2 and 3, as weak candidates lose, most ballots transfer to **moderates** and centrists inside that box.

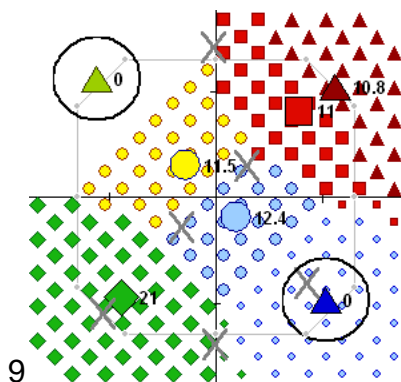
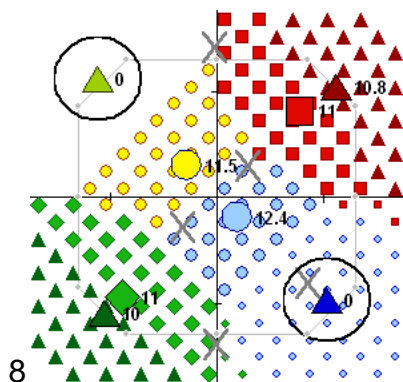
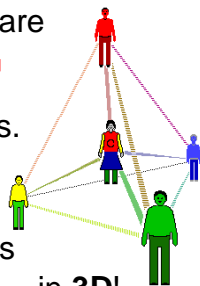


Votes Transfer, Elect Reps

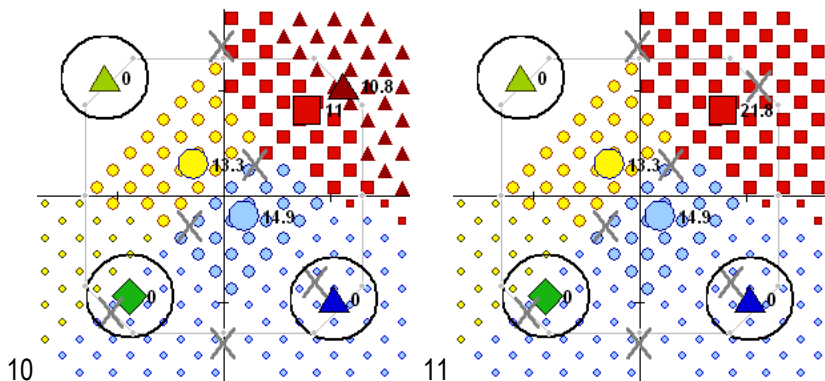


In 6, a candidate has just enough votes to win a seat. In 8, a winner has **surplus votes**; a fair share goes to each supporter's next choice. ◆ ● ■

The charts show only two issue dimensions. But a five-seat council can form decisions in 3D, if the reps are diverse. More issues and positions get represented in campaigns and debates, then in policies and budgets — in **3D!**

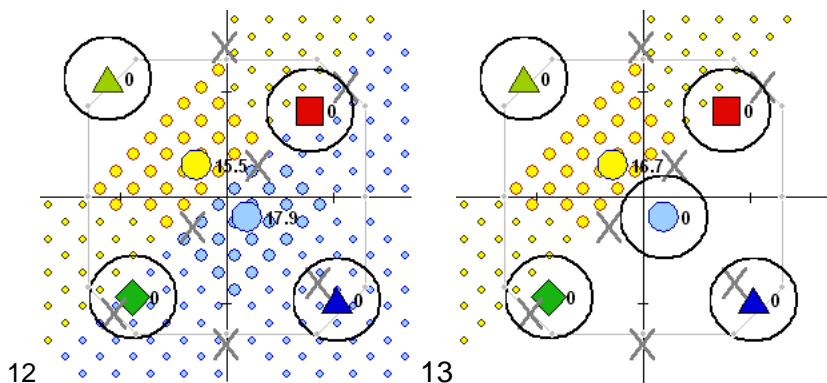


A Diverse and Balanced Council



The checkerboard pattern makes it easy to see votes transfer. SimElection™ also created uniform, random, “normal” and city patterns for research and play.

In 13, the box holds half the voters and all but one rep. Does STV tend to favor and elect fringe candidates? What percentage of votes is needed to elect five reps? Are the winners diverse? Balanced? Well centered?



No. Over 83%. Yes. Yes. Yes.

Simulation of Fair-Share Spending

Fair-share Spending helps voters organize many ad hoc groups large enough to fund their favorite items. Each voter may try to help a few different groups. They spend money, labor hours or any resource, for projects or the discretionary parts of ongoing budgets.

This map shows the garden plants proposed by voters in a village. Often, the site closest to a voter is most useful to him and is his top choice. But this case has four distinct interest groups: **Red**, **Yellow**, **Green**, and **Blue**. Items can appear close together on the map and yet be far apart in color. So colors here show a 3rd issue dimension as deep layers of color on the page.

This is a proposed **blue-flower garden**.



It is far from what **red voters** want, even if it is next door.



A voter prefers the closest item that features his favorite color.

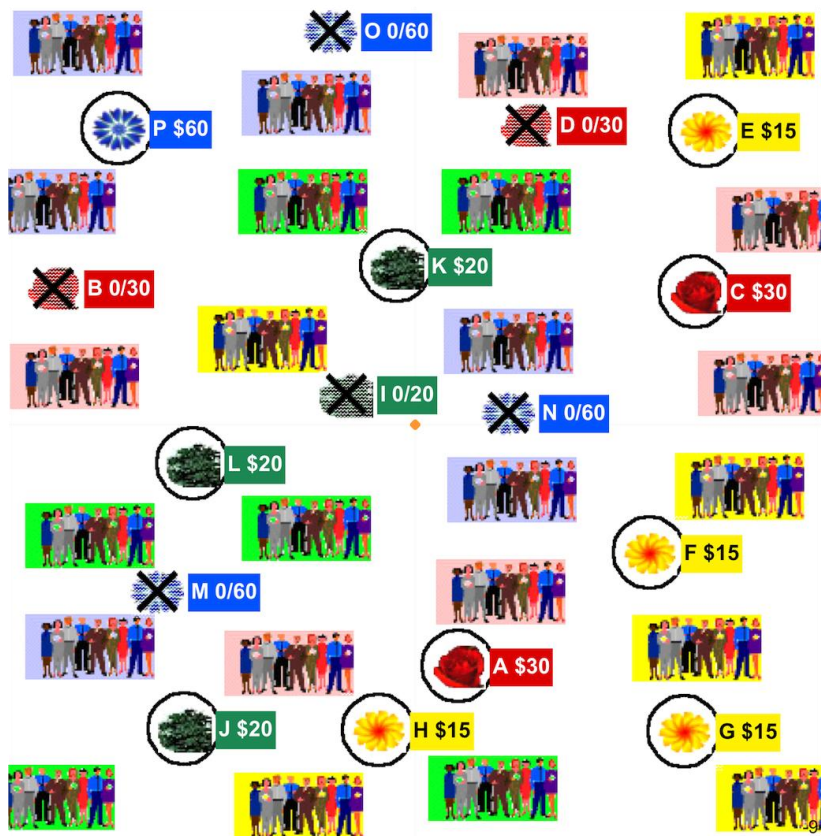
A garden club had \$240 for public plants and each interest group got a quarter of the votes. So how much did each allocate?

A red rosebush cost \$30, two big sunflowers \$15, an evergreen \$20, a blue passionflower vine \$60.

A group with few or low-cost proposals may be able to fund them all. Did that happen here?

\$60, \$60, \$60, \$60. Yes.

Balancing Projects



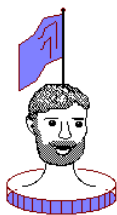
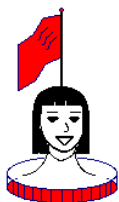
Try the sim to vary the item costs and group sizes, then see if each wins its share. Spread voters evenly, like this, or crowd some together. Notice, any ad hoc group may **focus** or **spread out** their spending.

Compare Three Councils

1. An **Ensemble Rule** is the best way to represent the center and all sides, as shown on page 6. In the map on the next page, Condorcet elects **Al**, then STV elects **Bev, Di, Fred** and **Joe**. Each winner's name is in **bold**.

2. A *Condorcet Series* elects the five closest to the central voter: *Al, Bev, GG, Joe* and *Fred*. There is no rep from the lower right, so the council cannot balance around the central voter. Each name is in *italic*.

3. The STV reps? Bev, Di, Fred, GG and Joe. Each name is underlined. STV did not elect **Al**!



Notice Two Surprises

1. Perhaps it's surprising that **broad Fair Rep** helps a central Condorcet winner own a council's swing vote. It shows that political diversity can be a source of balance and moderation as well as perspective.

2. Central chairs can lead a **diverse Fair Rep** council to broader majorities, including moderates from all sides. This can add to or replace some of the “checks and balances” used to moderate a council's action.

Well Centered and Balanced

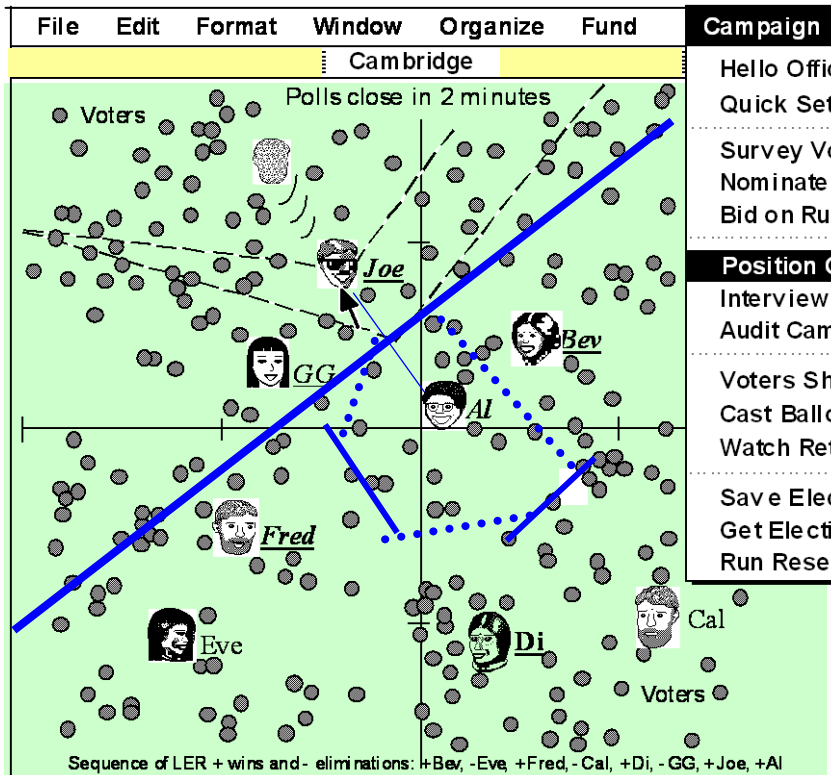
Only **Ensemble** councils have the breadth and balance of Fair Representation with the centering of *Condorcet*.

File	Edit	Window	Organize	Fund	Campaign
Washington D.C.					Survey Voters...
Polls close in 2 minutes					Nominate Candi
					Bid on Rules...
					Position Candi
					Interview Cand
					Audit Campaign
					Voters Shift...
					Cast Ballots
					Watch Returns..
					Save Election...
					Get Election...
					Run Research...

STV always elects a balanced council with moderates, and often a centrist. But STV does not push any rep to please a central majority of voters. Condorcet does.

Watch Condorcet Find the Center

This map puts a line halfway between Al and a rival. Voters on Al's side of a line are closer to Al; so they rank Al higher than the rival. For example, the long line has more voters on Al's side than on Joe's. So Al wins that one-against-one test. Al wins a different majority over each rival. To do that, Al's political positions must be *central* and have *wide-spread support*. page 29



In contrast, STV requires the most intense support, first-rank votes, to avoid early elimination. ● page 46

IV. Co-ops & Countries

Consensus and Voting

Group decision-making has two linked processes. Its **discussion process** may have an agenda, facilitator, and proposals, plus questions and changes for each proposal. Its **decision process** asks the members which proposals have enough support to be winners.¹

Voting only yes or no leads us to discuss and decide *one* formal motion at a time in a strict sequence. This stifles the sharing of ideas and development of a plan. But both **consensus** and **ranked-choice ballots** let us discuss and decide *all* closely related options together.

Discussing an issue well often resolves most parts, with mandates up to 100%. We may choose to decide some other parts by the best voting rules. Why?

Why Take a Vote

The best rules *strengthen* some reasons for voting:

- ✚ Choice ballots let us **speed up meetings**. page 31
- ✚ Secret ballots **reduce social pressure** and coercion.
- ✚ A well-designed ballot and tally **promote equality**:
Even busy or unassertive people can cast full votes.

The best rules *weaken* some reasons to avoid voting:

- ✚ A **Condorcet Tally** is less divisive. pages 12, 43
- ✚ It rewards blending compatible ideas. pages 29, 54
- ✚ So, more members help implement a decision.

Complementing Consensus

Groups that seek consensus on basic agreements may vote on other issues, perhaps to choose a minor **detail** like a color or to fund a few optional **projects**.

Fair-share Spending gives fair shares of power.

Inclusive yet fast, it won't let one person block action. Cooperative, not consensual or adversarial, it is less about blocking rivals, more about attracting allies. Its ballot guides a voter to limit and prioritize budgets. Its tally weighs dozens of desires, of varied cost and priority, from dozens of overlapping groups. We adopt, reject, or modify the FS results with our usual rules.

All majorities prefer the Condorcet winner.

A proposal must top each rival by 50% plus one; and we may require it to win 60% or even 100% over the status quo on issues involving our basic agreements. So 41% or even one voter may block a Condorcet winner by writing-in a basic concern about it.

Carpentry Analogy

The nice voting methods are like nice power tools, and nice consensus methods are like nice hand tools. The power tools speed cutting through piles of boards or issues, and cutting through a hardened board or issue. But high-touch tools help us appreciate our options and develop insights.² Most of us use both kinds of tools.

Context for Democracy

Money power and martial skills raised the patricians of old Athens, Rome and Venice. In time, more groups won voting rights, as they built skills, unity and allies.³ High demand for workers in farms, armies or offices often gave them economic and then political power.

Democracy grew most in the Age of Enlightenment. It was a time when people improved our knowledge of the world by rational, skeptical, **empirical thinking**.⁴



Move to a more democratic place.

“**Voting with your feet**”, by moving to a better town or group, is the surest way to get the policies you want. That is practical if you have the freedom to relocate and diverse places to choose among. This is more likely when laws, culture and technology facilitate freedom through **local self-reliance**.⁵

Even when you cannot move to a better company, city or state, you may still avoid willful authoritarians. Build your democratic groups with **fair egalitarians**.⁶

Better Voting, Better Living

Data on the next page suggests, to elect reps who enact superb health, education, tax, and other policies, a country needs effective, not wasted votes.

Does **Fair Representation** elect more women? p.18
Do they tend to raise health and education results?
Can these lift low incomes and so lower violent crime?

Do voter **turnout** or seats won by **women** tend to be lower in countries with more: population? diversity? religion? corruption? militarism? summer?!



Data Definitions and Sources

Measures of respectable power and policies

Seats per election district; Inter-Parliamentary Union

Women % of main legislature; Inter-Parliamentary Union

Turnout % Int'l. Inst for Democracy & Electoral Assistance

Health Rank first is best; World Health Organization

Math Score Program for Int'l Student Assessment, OECD

Poverty % of children below half of median income; OECD

Murder Rate per million; 7th UN Survey of Crime Trends

Averages for voting rules are weighted by population.

The table's **worst** numbers are in **bold**.

Country

Country	Seats	Women	Health	Poverty%			
		%	Turnout	Math	Murder		
Fair Rep	page 14	37%	75%	15	503	13%	12
<u>Sweden</u>	14	44	86	23	502	8	7
Finland	13	42	67	31	548	4	28
Spain	6.7	41	69	7	480	20	12
Norway	8.7	40	76	11	490	5	11
Belgium	8.4	39	89	21	520	13	16
Denmark	15	38	88	34	513	4	11
Netherlands	150	37	80	17	528	10	11
Austria	19	28	82	9	505	8	9
Switzerland	7.8	28	49	20	530	10	9
Costa Rica	21, 4	19	81	36	407	-	85
Uruguay	30, 2	13	90	65	409	-	79
Mixed, MMP	p17	36%	71%	26	505	9%	12
<u>Germany</u>	19, 1	39, 13	72	25	514	16	12
<u>New Zealand</u>	50, 1	45, 15	77	41	500	15	11
STV	pages 12, 40	34%	89%	29	517	14%	11
Australia ^o	6, 1	38, 25	93	32	520	15	11
Ireland	4	15	70	19	501	10	12
Runoff	page 10	27%	60%	1	496	11%	11
France	1	27	60	1	496	11	11
Plurality	page 4	18%	45%	34	486	19%	35
Canada	1	25	61	30	527	15	15
United Kingdom	1	22	66	18	495	10	14
United States*	1	17	39*	37	474	21	42

^o Each Australian state elects 6 senators at a time by STV; each House district elects just 1 member by IRV.

* U.S. turnout rises about 20% in presidential years.

V. End Matter

Some Endorsements

What have people said about *Accurate Democracy*?

1. “This is *the* site for learning about democracy.”

– Zoe Weil, author of *Most Good, Least Harm*, president of the Institute for Humane Education.

2. “a huge contribution to the democracy cause.”

– John M. Richardson Jr., former US Assistant Secretary of State for Educational and Cultural Affairs; Chairman of the National Endowment for Democracy.

“A very interesting site about voting procedures is: *Accurate Democracy*. Highly recommended.” – Arkadii Slinko, professor of political science and mathematics.

“I like your thoughtful application of the best voting techniques to the PB process, that seems like a sensible fit to me” – Tree Bressen, a leading author on group facilitation; referring to the [fair-share slideshow](#).

About the Author

VotingSite@gmail.com

Robert Loring has researched and developed voting rules since 1988. By 1993 he created *PoliticalSim*™ and *SimElection*™. They compared 30 voting rules from around the world and were used in a few universities. Pages 46-54 have graphics from the simulation games. In the late 90s, he built the *Democracy Evolves* website. This booklet summarizes the main points of the current website, *Accurate Democracy*.

Glossary and Index

- Accurate democracy** gives fair shares of seats and spending.
It cuts scams as it enacts each policy that tops all rivals. *goals*
- a **Finish line**, quota or threshold to win is Pages
the fraction or % of votes a rule requires.....4, 12, 15, **38-**, 46
- Free-rider amendments** don't relate to the bill.28, **31**, 36
- a **Killer amend.** Ruins a bill's chances or effects.28, **31**, 36
- a **Majority** is more than half; contrast plurality **9**, 12-, 27-, 54
- Mandate**, the authority votes give a winner *1st goal*..... **9-15**, 35
- a **Multi-member** district elects two or more reps.**15**, 18
- a **Plurality** has the most votes; contrast a majority.
" **rules** use yes-or-no voting; contrast **RCV**. ...**4**, 9, 21, 29-, 59
- a **Transferable Vote** can go to a voter's backup choice.
a tool for fair shares and mandates **12**, 38-, 46-
- Wasted votes** for 1) losers 2) winner's surplus 3) powerless reps
measure weakness in a voting result.....**10-16**, 21, 25, 42

Acronyms and Synonyms

Pages

- Consensus process; contrast Rules of Order..... 31-33, **55-**
- CT** Condorcet Tally, Pairwise Tally 26-**28-**, 43, 52-
- EC** Ensemble Council..... **New** **6-**, 29, 52-
- FR** Fair Rep, Fair Representation (US),
PR Proportional Representation..... 14-**16-**, 40, 46-, 59
- FS** Fair-share Spending..... **New** 20-**22-**, 41-, 50-
- RCV** Ranked-Choice Voting or Choice Voting (US),
STV Single Transferable Vote — is for FR..... **40**, 46-53
- IRV** Instant Runoff Voting (US), preferential voting,
AV Alternative Vote (UK) — is for SMD..... **12-**, 38-40
- SMD** Single-Member District elects one rep**4**, 14, 17

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References by Chapter

The reference numbers restart at one for each chapter.

This book is the first to present **Ensemble Councils** and **Fair-share Spending**. It also shows new voting games and pictures from SimElection™.

It compresses much of AccurateDemocracy.com (@) including a_primer.htm a_workshop.htm d_stats.htm. The website has *free apps* z_tools.htm, animations d_stv2d.htm or p_tools.htm, and Web links z_bib.htm

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Back Cover, See page 60.

Resources, for learning and action

At **AccurateDemocracy.com**, you'll find **free software**, **animations** of **STV** or **Fair-share Spending**, and pages on each voting tool, [a_primer.htm](#), [a_workshop.htm](#), [d_stats.htm](#), [SimElection.com](#), and references [z_bib.htm](#). 67

FairVote.org is a nonpartisan catalyst for electoral reforms. It is the best source for news, analysis and resources about voting reform in U.S. cities, states and colleges. It gives you model ballots, bylaws, editorials, research reports, voter education flyers, testimonials and videos.

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