

Conclusions

The best voting rules are fast, easy and fair.
They help any group from classroom to nation.
The results are well centered and widely popular.

Strengthen the votes supporting a
Chairperson, **Council**,
Policy, or **Budget**.



Actions

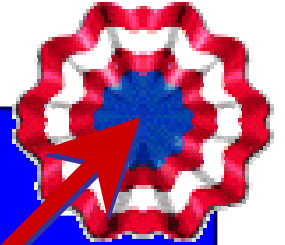
Learn more in this illustrated booklet.
Build support in your school, club or town with
FairVote, The Center for Voting and Democracy.

Help make your democracy:

-  **Organize** voters.
-  **Represent** everyone.
-  **Center** policies.
-  **Empower** everyone.

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Accurate Democracy



**4 GREAT TOOLS HELP
ELECTIONS AND MEETINGS**

Accurate Democracy

4 great tools help elections and meetings

Robert Loring

Please donate some
time to improve
democracy.

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These tools offer real **hope**; we can stop the tragedies caused by old methods often used in nations and towns, co-ops and corporate boards.

This primer shows the need for better voting rules. The games and sims show the simple steps in each tally. The website has the footnotes – and *free software*!

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Tragedies of Democracy

The Northwest has been ripped apart for 30 years as forestry laws are reversed again and again. Hasty logging in times of weak regulation lays waste to resources. Sudden limits on logging can bankrupt some workers and small businesses. **A political pendulum** swings; it cuts down forests and species, families and towns.

Old ways of adding up votes fail to represent large groups in many places. In North Carolina, there were 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.



What happens when the pendulum swings?

What's Wrong?

Our defective voting rules come from a failure to see there are different jobs for voting; and these need different types of voting.

We all know how to decide the simplest sort of issue: A question with only two answers is voted 'yes' or 'no'. For such an issue, the yes and no votes are enough.

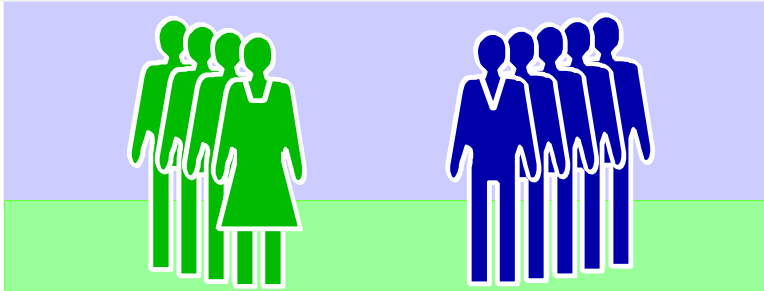
But as soon as three candidates run for one office, the question becomes more complicated. Then a yes-or-no vote is no longer suitable.



Will their votes have any effect?

In the 1800s

Winner-Take-All Districts = Off-Center Councils

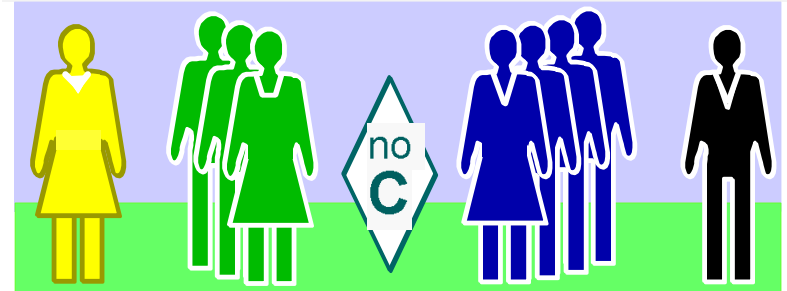


\$ \$\$ LAWS \$\$\$

Typical Council Elected By Plurality Rule

In the 1900s

Fair-Share Elections = One-Sided Majorities



\$ \$\$ LAWS \$\$\$

Typical Council Elected By Full Representation

Eras, Voting Rules and Typical Councils

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

Where only the largest party in a district wins a rep, only two big parties thrive. So the voters get only two real candidates; that is a very limited choice.

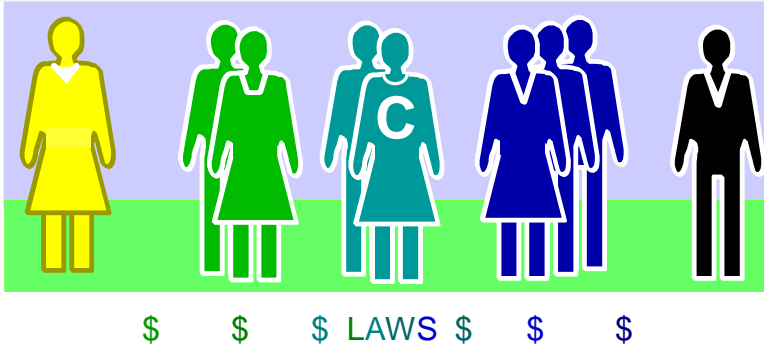
A council majority sets policies. (blue reps ↑ above). A small change in one district's popular vote can shift *all* power, making policies swerve from side to side. Plurality politics is a war of **winner take all**.

Full Representation was invented in the late 1800s to end some problems caused by plurality rule. Most democracies have adopted "Full Rep." It elects several people to represent each large district. It gives a group that earns, say 10% of the votes, 10% of the seats. Thus Full Rep delivers **fair shares** of representation.

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 (blue and black above) forms the ruling majority. They then enact ⇒ **policies skewed to one side.**

In the 2000s

Ensemble Councils = Balanced Majorities



Ensemble Elected By Central And Fair-Share Rules

New ensemble rules will elect most reps by Full 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 Full 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 new policies to **combine the best suggestions from all groups**.



Democratic Progress



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. And so does the average of rival plans.

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 education and income, freedom and safety, health and leisure.

An ensemble is inclusive; yet it is strongly centered and decisive. Voting rules for other tasks can follow this pattern. These will make the organization more popular, stable and quick. They are likely to avoid one-sided results and tragedies.

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 government services and taxes like Norway or Sweden, 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,
great gov. services

Low taxes,
poor gov. services

Plurality Election

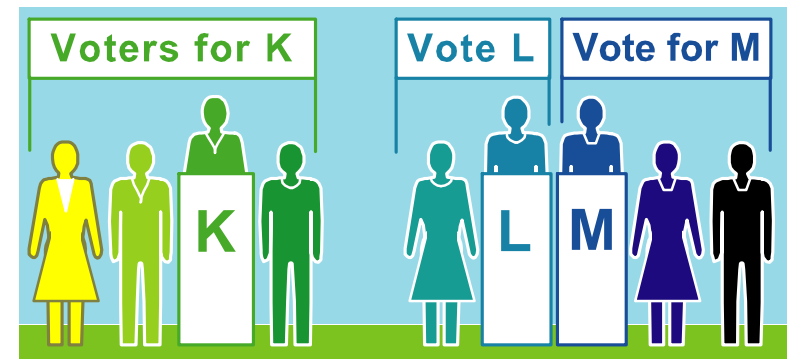
Three candidates stand for office. A voter likes the one whose political position is nearest. So voters on the left favor the candidate on the left.

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 anyone win a majority?	Yes, No
Who wins the plurality or largest share?	K, L, M
Who wins 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

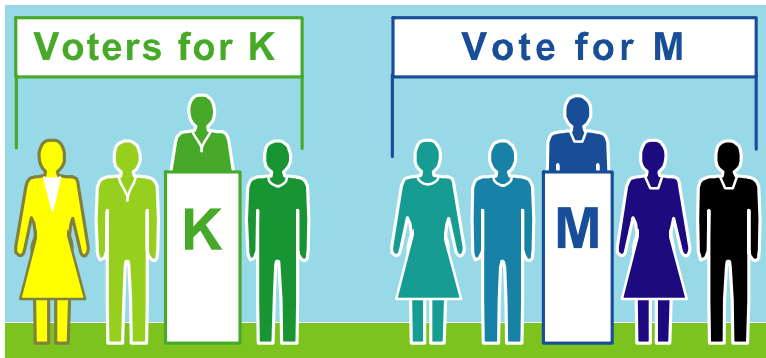
Who wins a runoff between the top two? **K, M**

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.

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.

Here a group spreads out on two issue dimensions: left to right plus up and down. On the steps of their school, we asked them a second question. It was about an issue apart from taxes and services.

“Please take a step up if you want more regulation. Please step down 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 mandate?

Seventeen voters spread out along two issues.



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 candidates as your first choice, second choice, third and so on. 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 next choice if your favorite has lost. This repeats until one candidate gets a **majority**.

Benefits of **Instant Runoff Voting (IRV)**

- **A majority winner** from 1 election, so no winners-without-mandates and no costly runoff elections.
- **Less negative campaigning**, as a candidate must ask a rival's supporters for their 2nd choice votes.
- **No hurting your first choice** by ranking a 2nd, as a 2nd does not count unless the 1st choice has lost.
- **No lesser-of-two-evils** choice, as you can mark your true 1st choice without fear of wasting your vote.
- **No spoilers**, as votes for minor candidates move to each voter's more popular choices.

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.

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.
- (Workshop page 34 shows votes moving.)

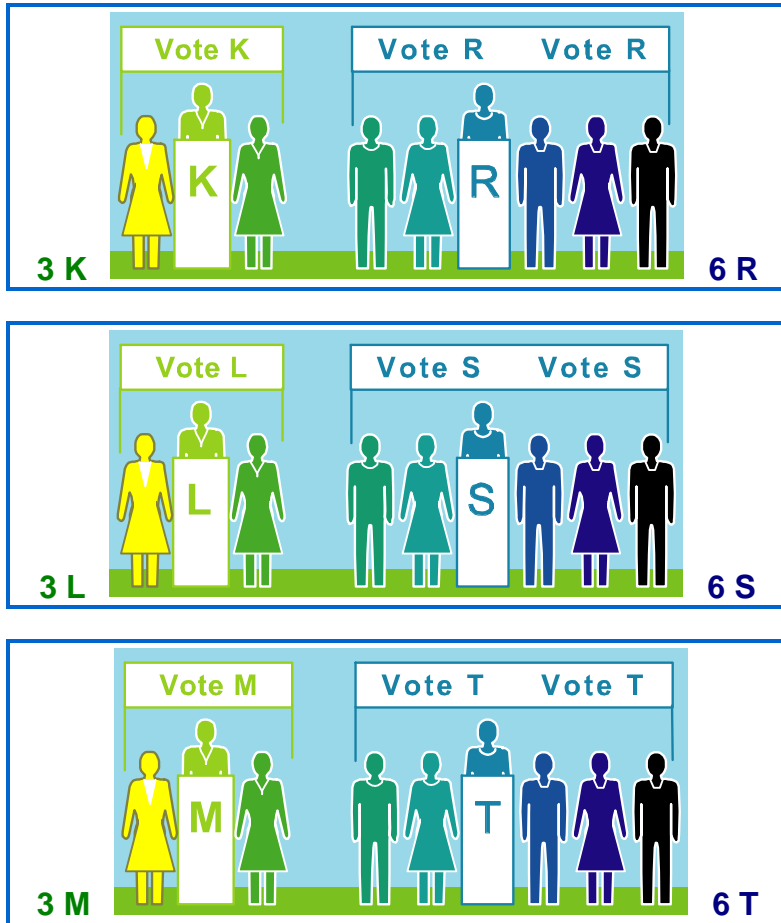
IRV elects leaders in more and more cities: London, Sidney, San Francisco, Burlington, Dublin and others. Students use it at Duke, Harvard, Stanford, Rice, Tufts, MIT, Cal Tech, Carlton, Clark, Hendrix, Reed, Vassar, The University of: CA, IL, MD, MN, OK, VA, WA, ...

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-Winner District Elections

A class of 27 wants to elect a planning committee. Someone says, "Elect a rep from each seminar group." The top group gives **Kay 3 votes** and **Ray 6 votes**.

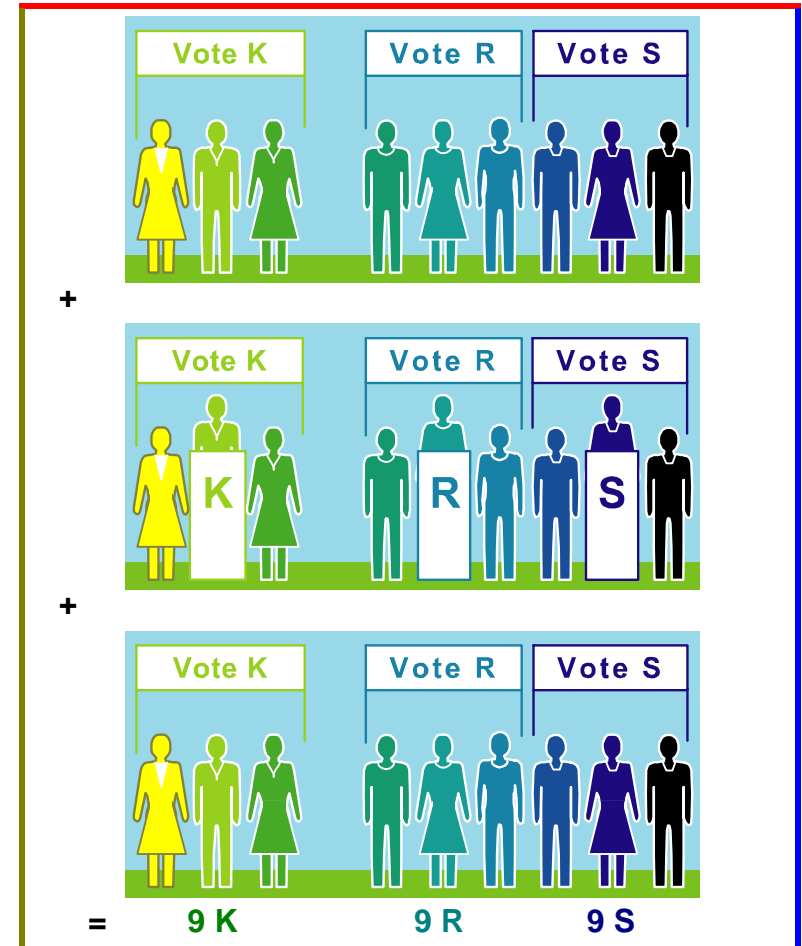


Bluish majorities win in all three sections.

Other voters get no voice on the committee.

Full 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."



Now bluish voters win two seats, a majority.

And other voters win the third seat.

The principle of **Full 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. Parties offer lists to us, or we each list favorites.
- The more votes a list gets, the more reps it elects.

Some Benefits of **Full Representation**

- It gives each big group a fair share of reps. So it often elects more political minorities and **women**.
- They tend to help **policies match** public opinion; and often raise the quality of health and education.
- It gives voters real **choices**, boosting voter **turnout**.
- A council of 3 must earn many more votes, $\frac{3}{4}$ vs. $\frac{1}{2}$. So Full Rep can strengthen a council's **mandate**.

Fair Shares and Moderates

Chicago now elects no Republicans to the State House, even though they win up to a third of its votes. But for over a century the city elected reps from both parties. The state used a fair rule to elect three reps in each House district. Most districts gave the majority party two reps and the minority party one.

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.



✓ **Shares of votes equal fair shares of seats.**

New Zealand switched in 1996 from Single-Winner Districts to a blend of SWD and Full Representation. A small, one-winner district exaggerates local issues. Full Rep frees us to elect reps with widespread appeal.

The number of **women** elected rose from 21 to 35. The number of native Maoris elected rose from 6 to 15, which is almost proportional to the Maori population. Voters also elected 3 Polynesian reps and 1 Asian rep.

Many people call this Proportional Representation or Proportional Voting.

Setting The Budgets

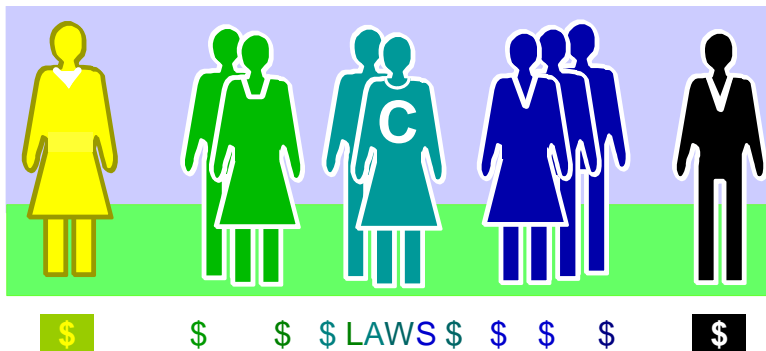
Fair Shares to Buy Public Goods

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. They might be the only votes in a direct democracy.

Full Representation gives out the council seats **fairly**. In the same way, Fair-share Spending allocates some spending power fairly. It is the next logical step.

Democratic rights fulfilled through history:

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



Fair shares give minority voters some power.

Bad Old Budget Patterns

The old way to set budgets blurs responsibility. Take overspending. Progressives say too much is spent on big weapons; conservatives blame the social services. Every rep can claim, “I didn't spend too much.”

Protecting the environment is popular with progressive and conservative voters. Reps don't dare attack it openly. So, to pay off some campaign gifts, reps slyly starved agencies that enforced environmental laws. Budget cuts also hit OSHA and auditors of corporate tax returns.

“Lower but constant funding is more productive than a roller-coaster budget that might average far more.”

The Superconducting Super Collider was an effort to build the world's largest cyclotron. It was funded by a majority in Congress for a few years... then dropped. All it left was a “billion-dollar hole in the ground.”

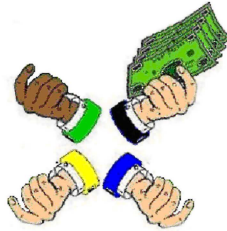
Members might be more cautious about starting vast projects if they could not spend other people's shares. And they should own the power to finish their projects with their own shares.

Patterns of Unfair Spending

Membership groups often shirk competitive elections to avoid conflicts and hurt feelings. But members still compete over money to fund projects.

Often, some members use tricks to capture a lot of the budget. When that injustice is felt, others may grow rebellious, or leave.

They need a rule that makes spending fair.



x Many empty hands

The US Congress lets a *single* rep “earmark” funds for pet projects in her district. In 1994, some 4,000 earmarks cost us \$23 billion. Ten years later, the bill was 14,000 earmarks costing us \$45 billion.

Earmarks help some reps give much more money to their districts than other reps do. Each rep votes ‘yes’ or ‘no’ to a huge “omnibus” bill. It holds hundreds of earmarks, some good, some bad. This system makes it hard to prove which reps waste money.

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.

Every neighborhood and interest group controls its share of spending power; no one is shut out. This makes (hidden) empires less profitable.



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

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 can buy the high-priority favorite of a big minority; it could make them happier.

In economic terms: The *social utility* of the 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 are each in some minority funding a project; and our budget serves and appeals to more people.

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 still needs grants from many voters to prove it is a **public good** worth public money. So we let a voter fund only a fraction of a project.

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

Then your money moves to help your top choices. And a tally of all ballots drops the least-funded item. This repeats 'til all still in the race are fully funded.

Merits of **Fair-share Spending** on New Projects

- After discussion, one poll **quickly** picks many projects. It reduces **agenda** effects such as leaving naught for the last items or going into debt for them. It splits the free-rider or poison-pill items from others.
- It lets sub-groups pick projects; it's **like federalism** but without new layers of taxes and bureaucracy. And it funds big groups both spread out and local.
- This does not hand minorities too much **power**: A majority spends most of any fair-share fund.

Adjust Budgets of Ongoing Agencies

Every "**line item**" starts with most of its old budget. You write-in and rank higher budgets for the items. Your ballot can afford to pay a fair share for many of your high ranks. Thus it gives them votes.

Each **budget level** of an item needs a quota of votes. It gets a vote from each ballot currently paying a share of the item's cost up to that level or higher.

The item with the weakest top level, loses that level. Any money you gave it flows to your highest rank that lacks your vote. This repeats until the top level of each item has a quota of votes.



Merits of **Fair-share Spending** for Agencies

- Majorities enact the laws that direct each program. They may end any program before the budget vote.
- It smoothes budget roller-coasters that hurt **efficiency**. It stops starvation budgets designed to cause failure.
- A member can waste only her share of the fund. Voters can **see** a rep's grants to each program, tax cut or debt reduction and hold her accountable.
- Fair-share voting builds **trust** in group spending, and may raise support for more of it.

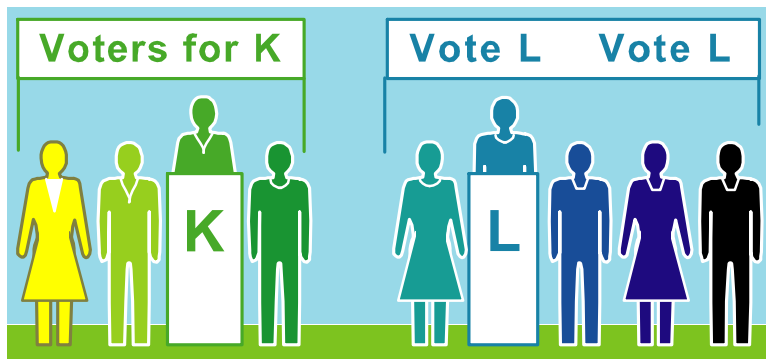
Enacting A Policy

Pairwise Test Number Two

The Runoff shown on page 10 was a one-against-one or “Pairwise” contest between candidates **M** and **K**. Five voters preferred **M** over **K**.

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

(Each person votes once with a full-choice ballot.
Page 40 shows one style. Page 39 shows a Pairwise tally table.)



K is nearest four voters.

L is nearest five voters.

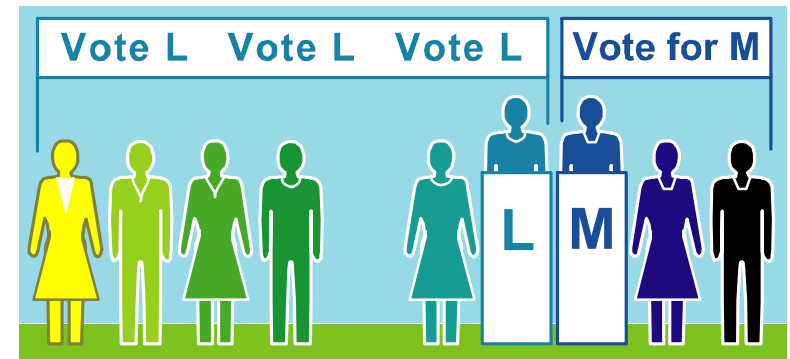
Pairwise Test Number Three

Candidate **L** wins her next one-on-one test also.

She has won majorities against each of her rivals.
So she is the one candidate who best represents all of the voters. She is the Pairwise Tally winner.

Could another person top candidate **L**? Yes, No
Hint: Is anyone closer to the political center? Yes, No
Who is the Pairwise winner on page 11? **K, L, M**

Thus Pairwise picks a **central** chairperson or policy. Is it likely to elect diverse reps? Yes, No



L has six votes.

M has three.

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

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

Option **M** tops option **K** if most reps rank **M** over **K**. Each ballot's rank of **M** compared to **K** concerns us. Their numbers of first-rank votes do not.

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

If another rule picks a different winner, our “round-robin” tournament, or *Condorcet* winner ranks higher on most ballots. So it wins a one-against-one majority over that other rule’s winner.

Pairwise Quickly Picks a **Balanced Policy**

- ✳ **Full-choice ballots** rank related motions all at once. They simplify the rules of order, speed up voting, and cut agenda effects, poison and free-rider amendments.
- ✳ **Balanced policies** avoid erratic or excessive changes. That saves money and builds respect for government. It reduces the game-of-chance and fear in politics. And it reduces the payoff from big campaign gifts.
- ✳ Pairwise can **elect a neutral** judge or administrator. It can elect moderators to cast the swing votes for a balanced, “ensemble council.” (See page six.)

Pairwise Popularity and Balance

A policy needs good marks from voters all along the political spectrum, because every voter can rank it relative to other policies. So all voters are “obtainable” and valuable. This leads to policies with wide appeal. (A plurality or runoff winner gets no votes from the losing side and doesn't need to please those voters.)

The Pairwise Tally winner is **central** and **popular**. Most voters of the **center and right** like it more than a **progressive** policy. Concurrently, most voters of the **center and left** like it more than a **conservative** policy. All sides can join to beat a narrowly-**centrist** policy.



A Chairperson's **Balanced** Support

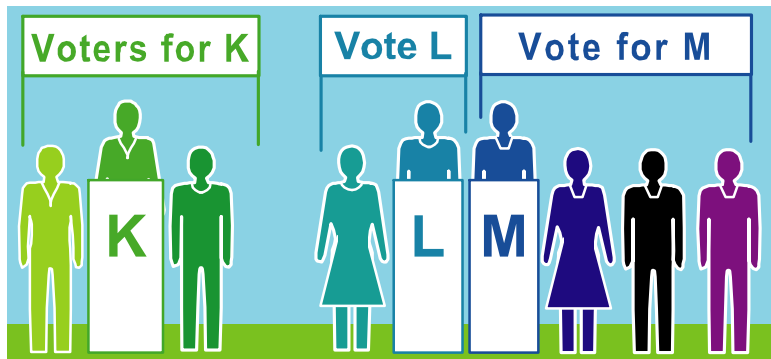
Progressive voters rank **Kennedy** higher than **Clinton**. To win a majority over **Kennedy**, **Clinton** must *outrank* him on ballots from the **center and right**.

Conservative voters rank **Bush** higher than **Clinton**. So to win a majority over **Bush**, **Clinton** must *outrank* him on ballots from the **center and left**.

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 her party is certain to win the new district. Reps will tend to come from the party's activist wing.

The old plurality rule is the easiest to manipulate. But the Pairwise winner, **L**, doesn't change in this case. And Full Rep's fair shares also resist gerrymanders.



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

Bribes can make some reps switch sides on a policy. Pairwise resists this well. Bribing one rep moves the council's middle, and its winning policy, only a little. Fair-shares and visible grants also restrain corruption.

Unstack the Agenda

Meetings often make interlocking decisions one at a time. They use a yes-no process, with or without rules of order, agendas, and votes. Proposals decided early can shut out later options.

Or people may talk about all options at once but never clearly tell (vote) their second and third choices. So a few people pushing a single idea can appear to be the strongest group. And one person with a balanced idea but no enthusiastic supporters might drop it.

The best rules avoid all those problems by ranking the rival motions (or budgets) on the same ballot.

In Groups of Any Size:

- ✓ A good tally **assures equality**; even busy or unassertive people cast a full vote.
- ✓ The secret ballot **protects dissenters** from all types of pressure and coercion.
- ✓ A ballot or survey **teaches members** as they try to set budgets and priorities.
- ✓ Multi-winner funding **gives fair shares**. Yet it doesn't let anyone block action. It is co-operative, not consensual or adversarial.

Benefits And Costs

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?

A group can **test** drive a new rule in a survey. Or a “committee of the whole” can vote, tally and report its result to enact by the usual rules.



Tools Between People

Voting rules affect our laws – and our views on life. By making us practice winner-take-all or sharing, rules change the way we treat each other and see the world.

Thus better voting rules can shift our **expectations**. Voting becomes less a tool that inflames culture wars, more a tool that upholds our diversity and freedom.

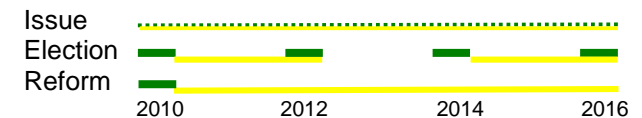
Voting Reforms Open Doors

These reforms open doors for popular changes. *e.g.* Data shows Full Rep elects more women than plurality. And this change leads to better health and education.

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. If you win control, you can help all issues for two years.

Reform campaigns cost no more than elections. A win affects the whole council for many years.



Campaign costs in green, results in yellow.

Strengthen Votes and Mandates

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

- * a **Chairperson** from a plurality to a majority; page 6, 24
- * a **Council** from a plurality to over three quarters; p14
- * a **Budget** from a few power blocs to all members; p18
- * a **Policy** from a one-sided to an over-all majority. p24

These rules give voters more effective votes. So they give stronger mandates to the winners.

Benefits to Voters and Reps

Accurate Elections

pages

- Give voters **real choices** of candidates who can win, by electing **fair shares** of reps from all big groups.
- This supports a wide range of candidates, debate of issues and **turnout of voters.** 14
- Reduce **wasted votes** to end weak mandates. 10, 9, 14
Cut the effects of **spoilers** and gerrymanders. 12, 28
- Reduce **attack ads** and anger among voters. 12
Cut the payoffs to big **campaign sponsors.** 26

Accurate Legislation

pages

- Give fair representation to all major groups. So the council enacts laws with **real majorities.** 14
- Elect a **central chair** with wide appeal. She'll be a **swing vote** between the reps from interest groups. 27 6
- Cut chances for agenda **scams**; detach poison pills and free riders. Speed-rank all options at once. 22 29
- Give all reps **equal funds** for projects and agencies. And let the voters see each rep's spending. 18-23

Our Web pages detail these benefits and more.
Next, tally games show *how* they meet these goals.
And free software on the Web makes real tallies easy.

Movable Votes

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

See fair-share tallies organize voters.

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



A tally 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 by **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.
- **Eliminate** the weakest candidate if no one wins. Draw names from a hat to break ties.
- **Move** your card if your candidate loses. This is your “movable vote.” (as explained on page 12).
- **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 <i>Finish Line</i> <i>Finish</i>		
B B		
J J		G G
M M		D D
L L		Z Z
V V		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. Your 2nd choice vote can't hurt your 1st choice: T, F
4. Only one candidate can reach 50% plus a vote: T, F
5. Name six cities or schools that use IRV.
6. What benefits does IRV give them?

Answers:

- 2) True, we count each card once in each round.
- 3) True, your 2nd doesn't count unless your 1st has lost.
- 4) True, more would need over 100% of the votes.
- 5) See page 13. 6) See page 12.

Choice Voting Electing Three Reps

For a three-seat election by **Choice Voting** (CV):

- The **finish line** is set at 1/4 of the cards + one.
Do not give a card to a candidate who has finished.
- **Drop** the weakest candidates one at a time.
- **Move** your cards until three candidates win!

CV is often called the "Single Transferable Vote."
It is **used in** some 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 CV give them? See page 16.
2. Only three candidates can win 25% plus a vote: T, F
3. What total fraction must three CV reps win?
4. What is the threshold for winning one of five seats?

Fair Shares Buy Public Goods

For Fair-share Spending by **Movable Money Votes** (MMV):

- Let's say we each put in \$1 to buy some items.
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 banker 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

MMV can also set budget levels for departments. Each **funding level** is like another project. It needs enough **cards** to fill it up.

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

One at a time, the weak ones lose and the money **moves** → to help favorites still in the running.

1. Should we let each member fund private items?
2. Should people who pay more taxes or dues get more power to spend public money?
3. Should voters see grants by a rep? (or a voter?)
4. Can your second choice hurt your first choice?
5. Who could use Fair-share Spending?
6. What benefits can it give them? See page 22.

Each funding level of an **agency** is like a project. But an agency starts with about 80% of its old budget. So a voter cannot give it zero and “take a free ride.”

Answers

Instant Runoff Voting: True, True, True.

Choice Voting: True, 3/4 + 3 votes, 20% + 1 Vote.

Fair-share Spending: no, no, yes (no), optional, many.

Pairwise Policies: yes, yes, no, balanced.

Get complete answers at www accuratedemocracy.com

Pairwise Tally Centers a Policy

For a Pairwise tally, the winner must top all rivals, **one-against-one**. Two examples show its effects:

- ✦ 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 **Pairwise 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.

- ✦ A pole stands at our center, by the median voter. It holds 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 are places for a **heater** in an icy cold room:

1. Do we turn on its fan to spread the heat wide?
2. Do voters on the fringes have any influence?
3. Can the middle voter enact any policy alone?
4. Do we get a balanced or a one-sided policy?

Full-Choice Ballots

Only a small group can crowd around a tally board. Big groups use paper ballots. They are often tallied by computer, with samples checked by hand.

Ballots for old rules oversimplify most issues. They let you mark only one candidate with a check. The limited choice can polarize voters and conflicts.

Full-choice ballots reduce those negative effects. They let a voter rank his 1st choice, 2nd choice, 3rd etc. Ranks often reveal the dichotomies, “us versus them” or left versus right, hide moderate points of view.

1

2

3

VOTE HERE

Fill only one “O” on each line.

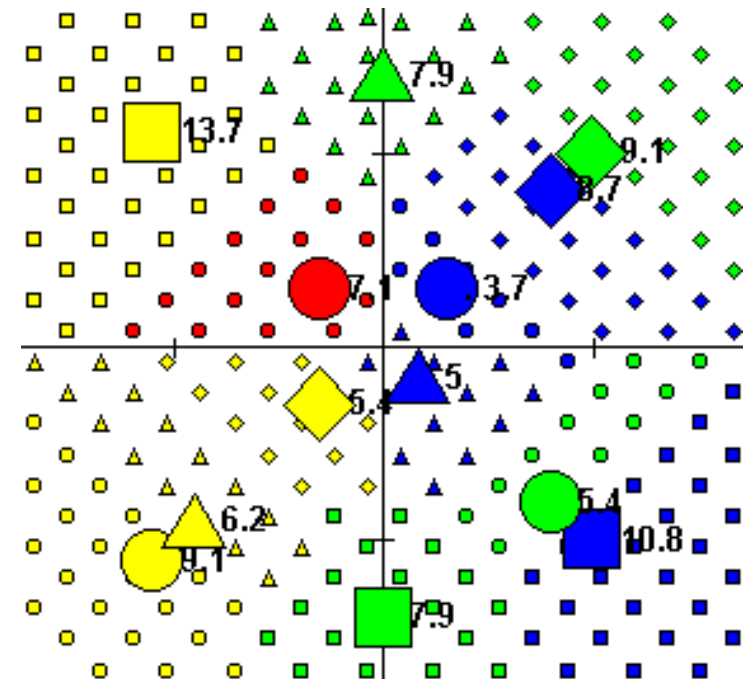
Names	Best _____ Ranks _____ Worst					
	1 st	2 nd	3 rd	4 th	5 th	6 th
John McCain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Barack Obama	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hillary Clinton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
John Anderson	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ross Perot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ralph Nader	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Write in</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

See Choice Voting Balance a Council

PoliticalSim™ made this scatter chart. It shows simulated voters as small dots and candidates as big ones. A voter's dot has the same color and shape as his current top choice, the closest candidate. A voter's dot will fade when his vote helps elect a rep.

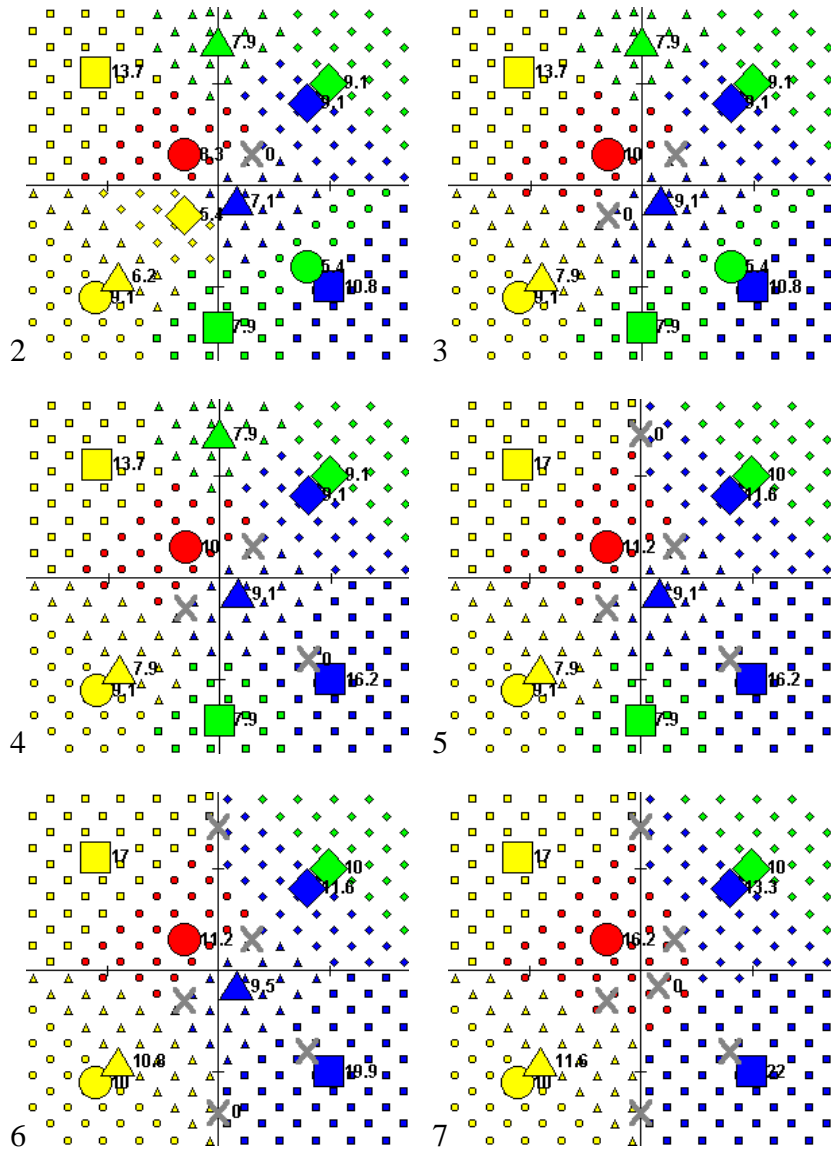
This field of play may show us the map of a town or two dimensions of political opinions.

The quota to win here is 20%. The number beside a candidate is her current share of the votes. Losers get an X and winners get a halo. Which will lose first?



Votes Move From Weak Candidates

Votes move from a loser to the voter's next choice.

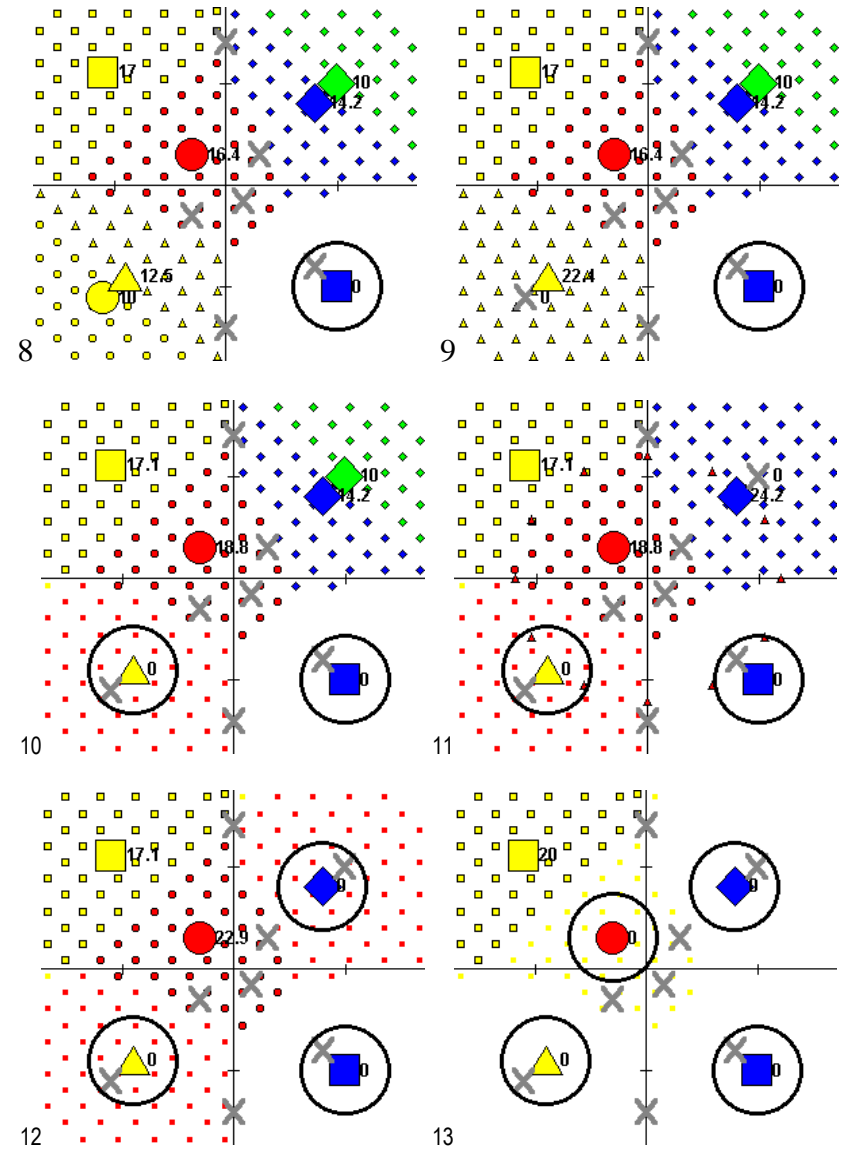


42

7. What happens next?

Losers Lead To Winners

Votes moving from a loser help a nearby candidate win.



14. Are the winners diverse? Are they balanced?

43

Simulation of Fair-Share Spending

Movable Money Votes, MMV, help voters organize groups large enough to fund their favorite items. Those may include projects or products for a community, college, club, co-op, condo, or congregation.

The resource allocated by MMV might be money, labor, water...

This map shows the locations of proposals and voters in a town. Normally the item closest to a voter is most useful to him and is his top choice.

But in this case there are four distinct interest groups: **Red**, **Yellow**, **Green**, and **Blue**. Items may appear close together on the map yet be far apart in color.

This is a proposal for a **Blue-flower garden**.



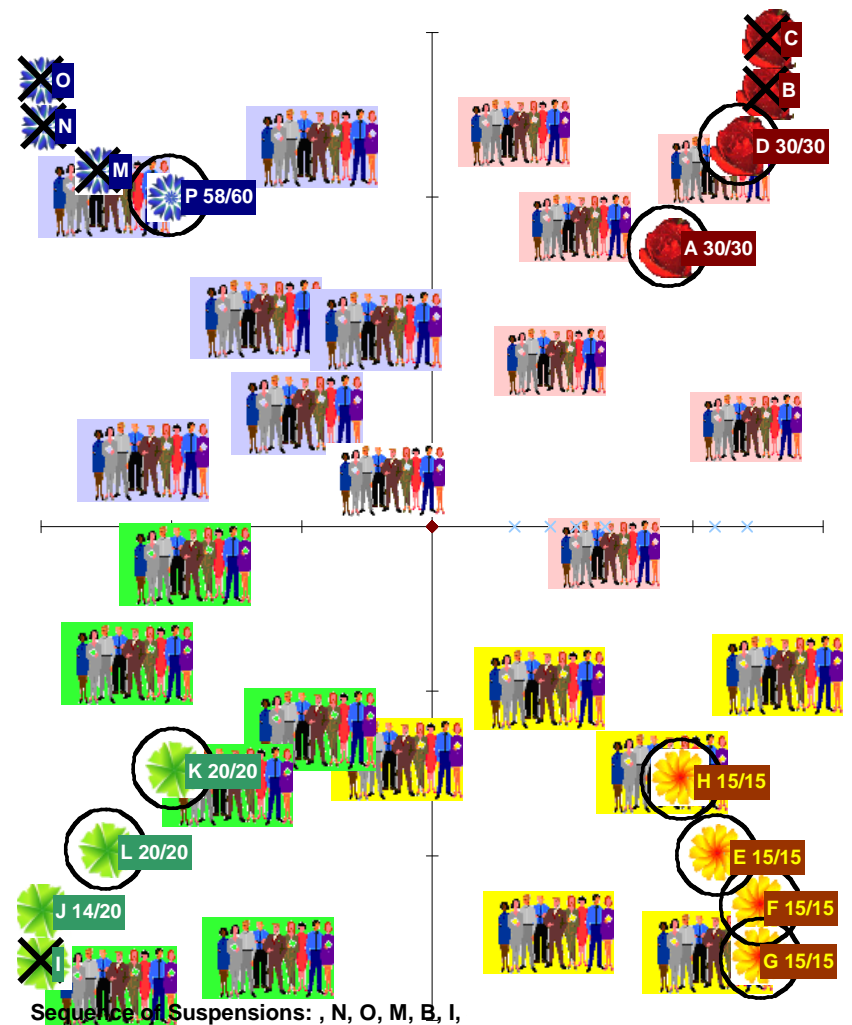
It is far from what the **Red voters** want, even if it is next door.



You can vary the costs of items to see that each interest group wins its fair share. In this example, a box of **yellow sunflowers costs \$15**, **an evergreen \$20**, **a red rosebush \$30**, and **a blue passionflower vine \$60**. A group with low-cost proposals may fund them all.

There is one more step in this tally. Who wins next?

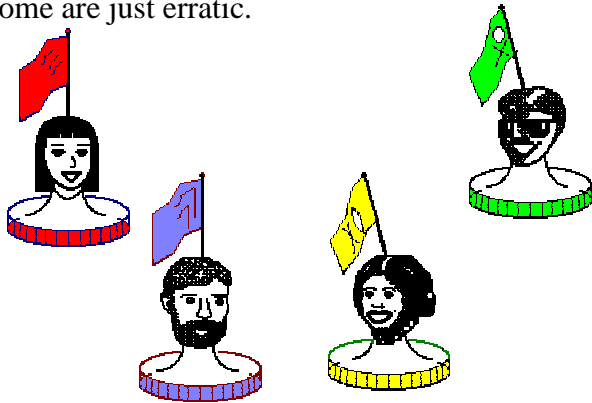
Park Project Funding



A town with four neighborhoods spends \$240. The NW neighborhood wants \$60 passionflowers. The SE wants \$15 sunflowers. Each gets its share.

See Different Voting Rules

PoliticalSim lets players test many types of voting. From Australia to old Zealand, there are many ways to elect reps. Each country's voting rule creates hot spots for players on the electoral field. But those strong positions might move if we change the voting rule. Some rules elect only centrists, some elect moderates, and some are just erratic.



Compare Three Councils

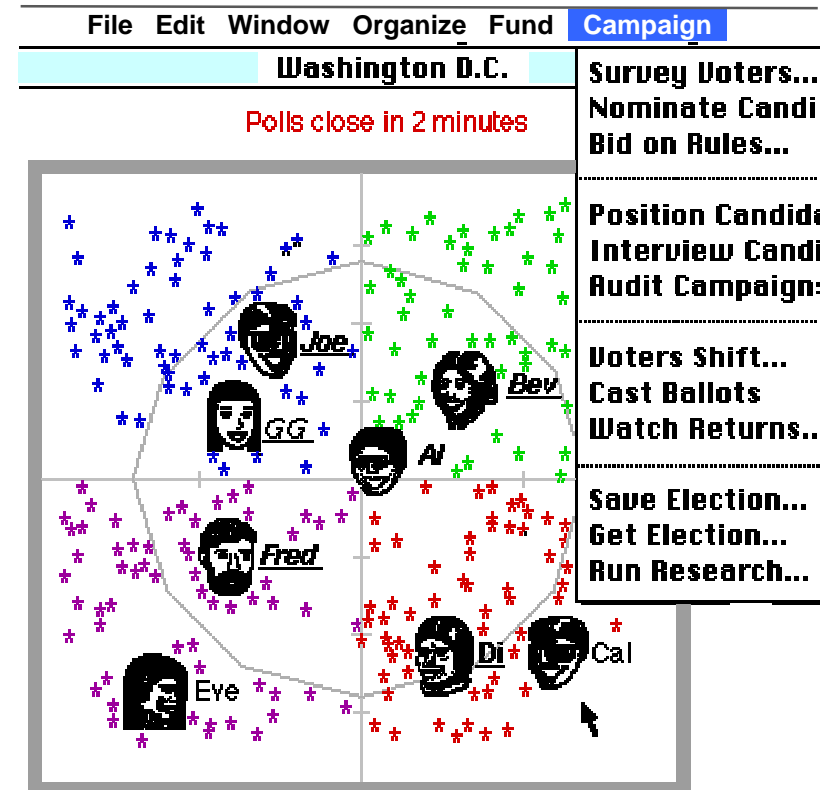
Simulations show a **Loring Ensemble Rule** is the best way to represent the center and all sides. In the map on the next page, it elects **Bev**, **Di**, **Fred**, **Joe** and **Al**. Each winner's name is in **bold**.

A *Pairwise Series* elects the five nearest 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. The *Bloc vote* and *Borda* rules also elect that off-center council. Each name is in *italic*.

The Choice Voting reps? Bev, Di, Fred, GG, and Joe. Each name is underlined. CV did not elect Al!

Comparing Councils

CV always elects moderates and often a centrist; the council is broad. But CV does not push any one rep to please a central majority of voters. Pairwise does.

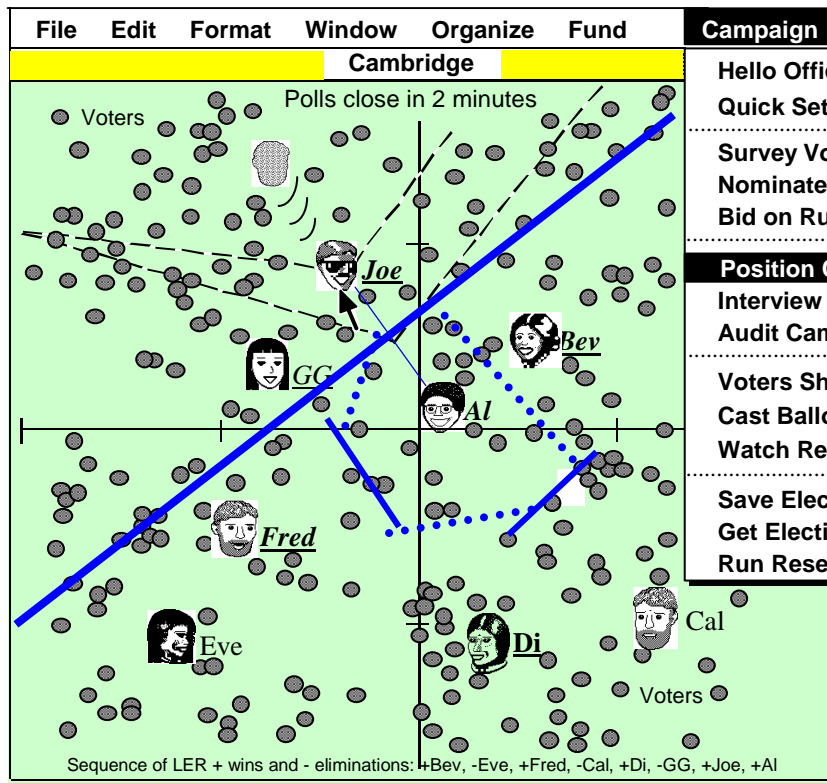


LER sequence of +wins and -eliminations:
 1+Bev, 2-Eve, 3+Fred, 4-Cal,
 5+Di, 6-GG, 7+Joe, 8+Al.

Only **Ensemble** councils have the centering of *Pairwise* with the breadth and balance of Full Rep! Page 6 tells more.

See Pairwise 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 him; so they rank him 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. He wins a different majority over each rival. To do that, his political position must be central with a wide appeal.



Contrast Al's appeal with the red circle on page 43. Choice Voting elected a centrist with a more intense but smaller base of support.

FAQs & Data

Why Full Rep Elects Women

The first questions many people ask are, "Why does Full Rep elect more women?" or, "How much do they affect policies?" These four pages answer those FAQs.

Full Representation elects several reps in a district. So each party offers several nominees to the voters. An all-male slate or **party list** would look totally sexist; so parties nominate some women. In contrast, one man nominated in each single-winner district does not look as sexist. (A party's list also may reveal its ethnic or religious bias; and Fair-share Spending can lay bare a party's budget priorities.)

In a multi-winner race, a woman is not so much running *against* a man or an incumbent. She is more likely to be seen as running **for her issues** and policies.

Women in some Full Rep countries considered **starting their own parties**. Under plurality rules, new parties divide a side and lead to certain defeat. But Full Rep promptly gives seats to a new party, if a big group of voters support it.

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

Election Rules and Policy Results

This data makes it clear: **advocates** for education, health care, a clean environment or a clean government should all work for better voting rules.

If we are overwhelmed by urgent needs, we neglect **essentials**, the structural roots of those problems. At the root, we get poor policies, due to poor representation, due to poor election laws.

The link between voting rules and **quality of life** is clear in data from nations. It's likely true for cities too, and for other democratic groups.

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.

Many countries elect more women now than they did 10 or 20 years ago. But the relative positions of countries change little – unless a country changes its voting rule as New Zealand did in 1996.

* **New Zealand and Germany** elect half of their MPs by Full Rep, and half in Single-Winner Districts. The SWDs elect few women; but in the same election, the Full Rep lists elect three times as many women.

Ireland elects fewer women than other Full Rep countries partly because it elects fewer reps in each district – it is closer to using single-winner districts.

Stable Democracies	seats / district	% Women	% Turnout	Health Rank	Math Score	% Poverty	Murders / M
Full Rep	page 14	37	77	19	501	12.1	10
Sweden	14	47	86	23	502	4	-
Iceland	10	43	86	15	506	-	17
Finland	13	41	72	31	548	4	28
Netherlands	150	41	80	17	528	12	11
Norway	8.7	39	83	11	490	-	11
Denmark	15	38	83	34	513	3	11
Spain	6.7	36	70	7	480	17	12
Belgium	8.4	35	93	21	520	10	-
New Zealand	*51,1	45,15	81	41	522	15	11
Germany	*299,1	39,13	78	25	504	16	12
Austria	19	28	86	9	505	6	-
Switzerland	7.8	28	47	20	530	9	9
Greece	5.7	17	77	14	459	13	7
Choice Voting	p36	33	89	29	516	12.9	14
Australian Senate	6	36	95	32	520	12	15
Ireland	4	22	69	19	501	16	9
Instant Runoff	p12	27	95	32	520	12.0	15
Australian House	1	27	95	32	520	12	15
Runoff	page 10	18	89	1	496	8.0	17
France	1	18	89	1	496	8	17
Plurality	page 4	18	49	34	482	18.8	35
Canada	1	22	55	30	527	15	15
UK	1	20	58	18	495	10	14
USA	1	17	47	37	474	21	42

FAQ Three

The *third* common question many people ask is, “Can we make these changes?” Yes, positive changes are happening! More and more places are adopting Instant Runoff Voting, usually through referendums. The vote is often 2 to 1 in favor of strong democracy.

✓ *FairVote*, the Center for Voting and Democracy, is the best source for current news and data on voting reform in American cities, states and colleges.



Data Definitions and Sources

Seats per election district; Inter-Parliamentary Union

Women % of main legislature; Inter-Parliamentary Union.

Turnout % International Foundation for Electoral Systems.

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.

Do female reps tend to raise education and health results?

Do these raise low incomes and so lessen violent crime?

Our Web pages show more data and sources.

FAQ-4 An index as review is on page 32.