



# DEMOCRACY EVOLVES!

The best voting methods for elections and meetings. Free software!



**Humor** Who said, "He is a barbarian and thinks the customs of his tribe are the laws of nature." 1) George Bernard Shaw 2) Mark Twain 3) Newt Gingrich 4) Pat Robertson ?

## Democratic Solutions

This article explains improvements for democracy in any size from schoolroom to nation, and at all steps from nominating candidates to allocating funds. The 3 tragedies below were caused by the most common voting systems used by nations and towns, co-ops and corporate boards. The next sections describe single- and multi-winner election rules. Later sections add:

Policies: Vote once to enact 1 policy out of many options ... p 6

Projects: Vote once to select and budget several projects..... p 7

Budgets: Vote to simultaneously adjust each budget. .... p 9

## Tragedies By Design

**A** In South Korea's 1987 presidential election, 2 liberals faced the heir of a military dictatorship. The liberals got a majority of the votes but split their supporters, so the conservative won under a **plurality** vote-counting rule. These rules elect whoever gets the most votes; 50% is not required. The militarist party claimed a mandate to continue its repressive policies. Defeated at the next election, its leaders were convicted of treason for ordering the tragic shooting of pro-democracy demonstrators.

**B** In North Carolina, the plurality rules deny representation to African-Americans. They have enough voters to fill 2 election districts. But they are a 25% minority scattered over 8 districts. So for 100 years they won no federal representation. Without representation, many felt invisible as voters.

**C** The Pacific Northwest has been ripped apart for 20 years by repeated reversals of environmental laws. Hasty logging in times of low regulation lays waste to resources. Periodic bans on logging bankrupt workers and small businesses. A political pendulum swings, cutting down forests and species, then families and communities. Governments and businesses often lose wealth when a legislature changes hands and changes laws. These reversals are a major reason for war-like politics.

## “ Why we need new rules

*after George H. Hallett Jr.*

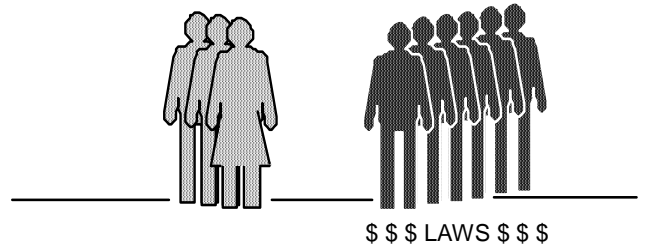
Our defective voting rules come from the failure to realize there are different types of election which require different methods of voting. "We try to carry over to more complicated situations a method which is only suitable in deciding the simplest sort of issue, that is, whether a question with only 2 possible answers shall be answered 'yes' or 'no'." "For such an issue a simple majority election is, of course, sufficient."

As soon as 3 candidates present themselves for a single office (or 3 answers to a single question) the situation becomes more complicated and a simple yes-no vote is no longer suitable.

When what we want is not a single officer or decision among alternatives, but a council fit to represent the voters, something quite different is required. What is needed is not a system of dividing the voters into winners and losers but a system of condensing them in the right proportions into their chosen leaders.

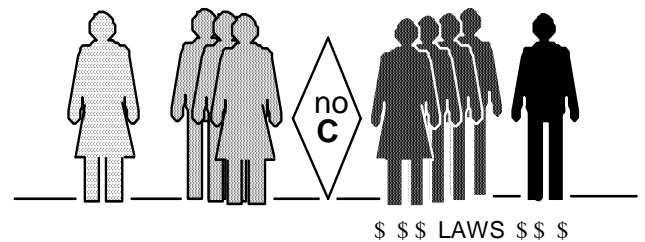
**INSIDE:** Women as reps and free computer games!

## Eras, Voting Rules and Typical Councils



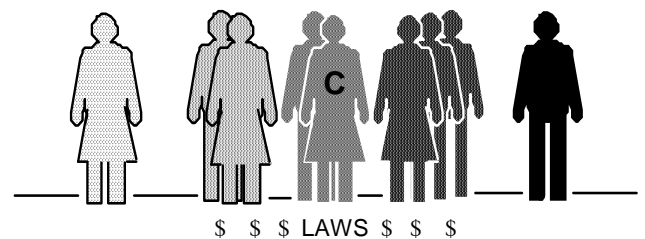
### 1800s Winner-Take-All Districts = Off-Center Councils... p1

Most English-speaking nations still use the ancient plurality rule. They elect only 1 rep from each electoral district. So only its largest group has the right to representation. This rule tends to produce 2 political parties; voters get only 2 options, and politics cover a narrow range of issues and viewpoints. The council's majority party sets policies. (dark gray above) A tiny change in 1 district's popular vote can shift power, making policies flop from side to side. It is a war of winner take all.



### 1900s Fair-Share Elections = One-Sided Majorities . p 2

Proportional Representation was invented in the late 1800s to end some problems caused by plurality rule. Most democracies have adopted "PR". It elects several people to represent each large district. PR gives a party that wins, for example 11% of the votes, 11% of the council seats; thus PR always gives fair shares of representation. It leads to broad representation of issues and viewpoints. But usually there is no central (C) party and the 2 biggest parties frequently refuse to work together. So the side with the most seats (dark gray and black) forms a ruling majority which then enacts policies skewed to 1 side.



### 2000s Ensemble Councils = Balanced Majorities.. p 5

New ensemble councils will have PR seats plus seats filled by a central rule (C). To win by the central rule explained below, candidates must have broad appeal and views near the middle of the electorate, hence at the middle of a PR council. So they hold the council's decisive swing votes. Their broad constituency demands policies balanced with the best ideas from each side, not narrowly centrist nor mechanically averaged.

## A Organize Voters

A common problem in a vote-counting rule is too many candidates splitting a group of voters. To solve that, each voter ranks the candidates, simply saying who he likes best, 2<sup>nd</sup> best and so on. On the ballots below, voter 1 likes candidate *B* best.

Rank	7 Ballots							Four ballots are a majority.
	1	2	3	4	5	6	7	
1 <sup>st</sup>	<i>B</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>A</i>	<i>D</i> is 1 <sup>st</sup> choice for 3 voters.
2 <sup>nd</sup>	<i>C</i>	<i>C</i>	<i>B</i>	<i>C</i>	<i>C</i>	<i>A</i>	<i>B</i>	<i>A</i> , <i>B</i> , or <i>C</i> get fewer firsts,
3 <sup>rd</sup>	<i>A</i>	<i>D</i>	<i>D</i>	<i>B</i>	<i>A</i>	<i>C</i>	<i>C</i>	so <i>D</i> wins by plurality rule.
4 <sup>th</sup>	<i>D</i>	<i>A</i>	<i>A</i>	<i>A</i>	<i>B</i>	<i>B</i>	<i>D</i>	Nobody wins a majority.

**Condorcet's rule** elects the 1 candidate who beats every rival in a series of *1 against 1 tests*. If most voters prefer (rank) *A* over *B*, *A* passes that test. Each ballot's rank of *A* relative to *B* concerns us; the number of first-rank votes is not important.

Each number below tells how many ballots rank the name in the row heading over the name in the column heading.

Condorcet tests			<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Four ballots rank <i>B</i> above <i>A</i> .	for <i>A</i>	–	3	2	2	
Three voters prefer <i>A</i> over <i>B</i> .	for <i>B</i>	4	–	3	4	
So <i>B</i> passes that test and <i>A</i> fails.	for <i>C</i>	5	4	–	4	
<i>C</i> tops each rival so <i>C</i> wins.	for <i>D</i>	5	3	3	–	

### Merits of a Condorcet Chairperson

Condorcet's rule is the best for finding the most-central candidate. In a 1 on 1 test, the candidate with opinions favored by the most central voter usually wins a majority (the central voter plus all voters on 1 side). But if she appeals only to centrists, the moderate and fringe voters on all sides can give higher ranks, and the election, to someone whose appeal is wider. Wide appeal and policy positions close to the median voter's make this the most appropriate candidate to moderate debates.

Under Condorcet's rule all voters are obtainable and valuable. For example, Gephardt out ranks Clinton on liberals' ballots, so for a Condorcet win, Clinton would have to appeal to centrists and conservatives – even though he cannot hope to be the 1<sup>st</sup> choice for conservative voters. Clinton would have to appeal to liberals also in order to beat other central candidates.

Critics charge that Condorcet's rule might elect politicians whose meekness and indecision offends nobody. But obviously those critics are exasperated by indecision, as are many voters – whose collective judgment must be followed.

Central leaders tend to be pragmatists whereas others are more doctrinaire and intolerant – with sometimes-disastrous consequences. Constructive leaders of the 21<sup>st</sup> Century will be challenged to raise tolerance of religions and cultures.

A group with many candidates does not splinter. Its members may rank all of their nominees above other candidates. Then each nominee gets all of that group's ballots when tested against an outsider. Finally, if another voting rule picks a different winner, the Condorcet winner ranks higher on most ballots and would win a majority in a 1 against 1 test.

There is usually one who tops all others. When there is none, the IRV rule described next might be best. Section D tells why.

A very different way to organize groups of voters is called **Instant Runoff Voting**, or **IRV**. Here is an analogy: each candidate sets out a box. A voter's ballot goes in his favorite candidate's box. The ballots are counted. If the box gets a *majority* of the ballots, it wins. If there is no winner, the candidate with

fewest votes loses. Her box is eliminated. Each of her ballots is moved to the *voter's* next choice.

Ranking a 2<sup>nd</sup> choice cannot hurt your choice 1<sup>st</sup> choice – the 2<sup>nd</sup> does not count unless the 1<sup>st</sup> choice has lost.

In step 1 below, nobody wins a majority. *A* and *C* tie for last with 1 vote each. Most ballots rank *C* higher so *A* is dropped. Ballot 7 goes from that voter's 1<sup>st</sup> choice, *A*, to his 2<sup>nd</sup> choice, *B*.

Ballot transfers organize the 7 ballots into groups supporting stronger options. Four of the 7 ballots rank IRV winner *B* over plurality winner *D*. But another 4 of 7 rank Condorcet winner *C* over *B*. When there is one, the Condorcet winner is strongest.

STV step	Ballots for				Action
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	ballot goes to voter's next choice
1	1	2	1	3	Drop <i>A</i> . Move ballot 7 from <i>A</i> to <i>B</i> .
2	–	3	1	3	Drop <i>C</i> . Move ballot 3 from <i>C</i> to <i>B</i> .
3	–	4	–	3	<b><i>B</i> wins a majority</b>

In the Korean example, ballots for the weaker liberal could help elect the stronger liberal under both IRV and Condorcet.

The Australians and Irish use IRV in many elections and call it Preferential Vote or Alternative Vote. When used for multi-winner contests it is called Choice Voting, Hare's rule, or **Single Transferable Vote (STV)**. And that is the next topic.

## B Represent Everyone

Another common problem in an election rule is electing representatives only for the largest group of voters.

We can solve that using **STV**, but here a box needs less than half the ballots to win a seat on the council. To win 1 of 5 seats requires the top rank on only one-fifth of the ballots or 20%. An interest group with 20% of the voters will win 1 seat after moving their ballots, no matter how many extra nominees they start with. A group with 60% of the voters wins 3 seats and only 3. That is their fair share, their Proportional Representation. If a candidate gets more than enough votes, a share of the extra votes goes to each supporter's next choice. (See page 3, #4)

### Proportional Representation



Proportional Representation (**PR**) elects several people from each large district. A district with 3 reps might elect 2 from the largest party and 1 from another party. This represents more points of view. The more seats in a PR district, the more accurately its reps speak for its voters. This inclusive representation continues democracy's progress toward wide participation in power. All democracies fulfill a minority citizen's right to vote; most fulfill a minority's right to representation.

PR is used by most stable democracies including: Austria, Belgium, Brazil, Denmark, Finland, Germany, Greece, Holland, Hungary, Iceland, Ireland, Israel, Italy, Japan, Nicaragua, Norway, Poland, Portugal, Russia, Spain, South Africa, Sweden ...

STV is used in cities, towns, schools and universities: such as Cambridge University and the city of Cambridge Massachusetts.

In 1993, New Zealanders voted to drop plurality rule for "party list" PR. Like the USA, New Zealand inherited plurality rule while it was a colony of Great Britain – the first large nation to hold elections. Voting for reps has evolved in newer democracies. The British themselves have been edging toward PR; they use it to elect reps to the European Union and for the new legislatures of Scotland, Wales, and Northern Ireland. 2

# STV Protects Majority Rights

Each candidate sets out a box.  A voter puts his ballot  in his favorite candidate's box. The ballots are counted. If the ballots in the box equal the number needed to win a seat, the candidate wins. If it gets too many votes, the voter gets a share of the excess transferred to his next choice. (step 4) If a round of counting finds no winner, the box with the fewest votes is eliminated. Its ballots transfer to each voter's next choice. (steps 2, 3, 5)

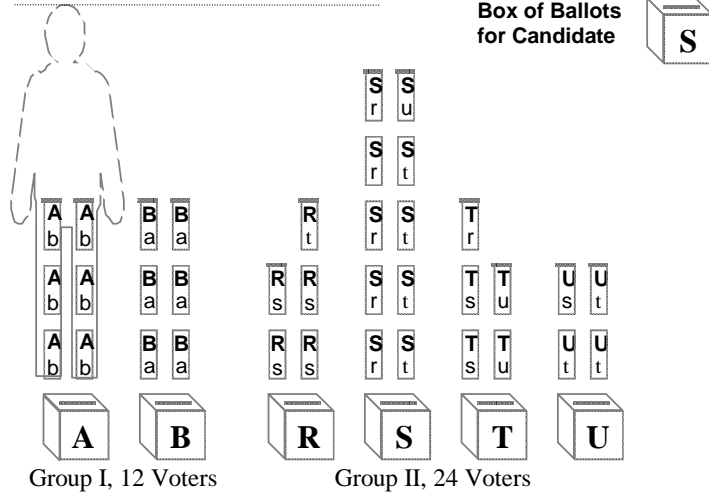
Here we see a whole STV tally turning ballots into reps; 12 ballots add up to 1 rep. 36 votes / 3 seats = 12 votes for 1 seat.

Neighboring candidates have similar opinions so most voters rank them close together.

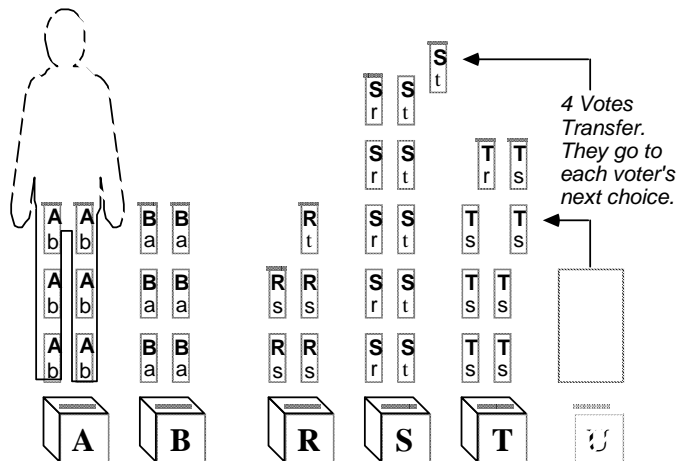
The old plurality rule elects A, B, and S. So group I gets 2 reps for 12 voters while group 2 gets only 1 rep for 24 voters. That is not fair and it does not lead to majority policies. But group I gets no rep if group II gives 2 votes to R, 7 to S, 8 to T, and 7 to U. Plurality rules are erratic as well as unfair. This shows the importance of ranking candidates and transferring ballots.

## 1) Initial Ballots

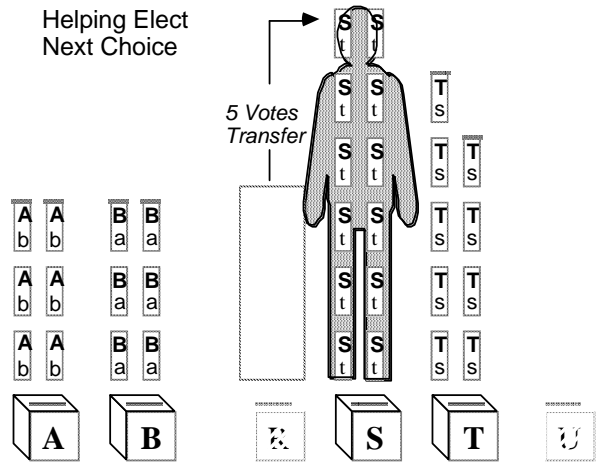
12 ballots will elect 1 rep.



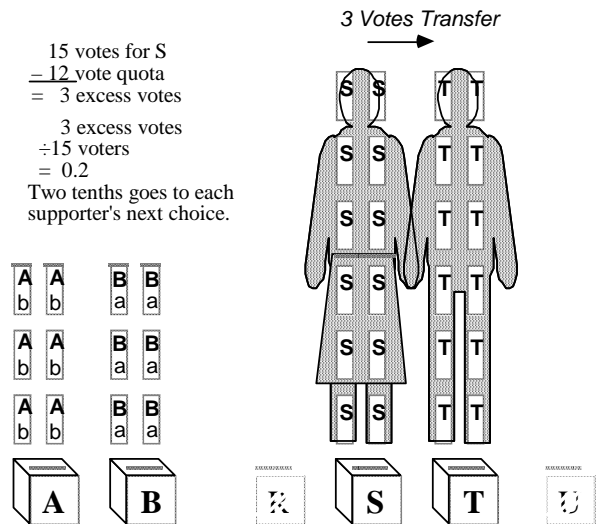
## 2) Transfer Votes From Last-Place Candidate



## 3) Transfer Votes From Last-Place Candidate

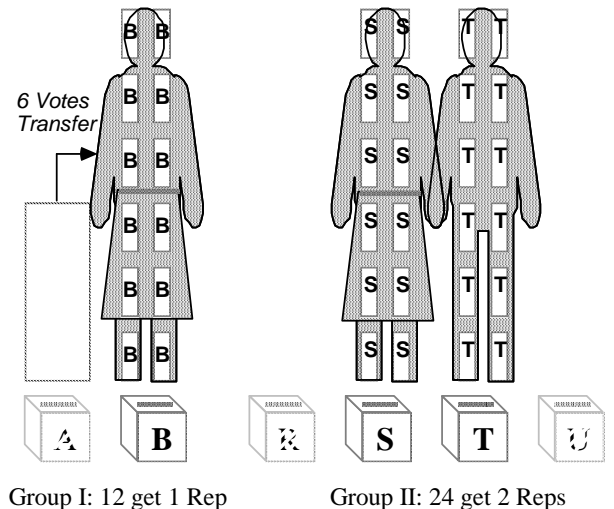


## 4) Transfer Excess Votes



## 5) Transfer Votes From Last-Place

The tie between A and B was broken using all initial ballots and Condorcet's Rule. Group II prefers B.



## Two Views on the Purpose of Elections:

A) "An election should give representation to the range of opinions held by voters. Give them a forum to debate and refine policies for the common good." This view emphasizes the integrating purpose of elections and representative committees.

B) "The goal of an election is to give 1 group the power to rule. Give them a clear mandate to resolve necessary choices." We could call that the dominance purpose of an election.

This view risks turning into dictatorship: If the biggest party should dominate a government, should the biggest subgroup control the biggest party? And should the biggest sub-subgroup... 1 side, 1 party, 1 faction, 1 leader.

Compromises must be made at some level, even if that is in the mind of 1 person. Any 1-party government enacts compromise policies, although the process may be secretive. Democrats hold that political decisions are better when many minds work together, when the options are debated in public from many points of view, and when power is fairly distributed.

PR often gives no party a majority of seats. Critics say this leads to weak, indecisive governments. Yet even a legislature with a majority party can be indecisive if reps vote freely and use majority rule, as in the US Congress. But when reps vote by Condorcet's rule, they can quickly find a new majority for each issue. Then there is no ruling group, no powerless group and no failure to resolve necessary choices (more on page 6).

STV has been said to favor extremists. The gray ring on the back cover illustrates one fact refuting that charge. It encloses only about 50% of the simulated voters. But it usually includes 100% of the reps from STV elections for 7 seats or less. Moderates on or just inside that statistical line routinely beat candidates from the outer half of the electorate.

## Merits of Proportional Representation

**Women** usually win more seats on PR councils than on councils elected by older rules. The US and England, for example, use the ancient plurality rule and about 10% of their reps are women. In contrast, the oldest democracies in Europe use PR rules adopted in this century and 30% of their reps are women. Nations using both elect more women by PR than by plurality.

Why? Because most parties nominate some women in each PR district to attract particular voters. A party that offers all-male slate of nominees looks corruptly sexist. But 1 man campaigning in each 1-winner district does not look as sexist. A PR party's slate also may reveal any ethnic or religious bias.

Women in some PR countries considered starting their own parties. Under plurality rules, new parties divide a side and lead to certain defeat. But PR gives seats to a new party supported by a large minority. This reasonable threat forced the old liberal parties to decide that political experience was not as important as gender balance. They dropped some experienced men to make room for women on their lists of nominees. And they won. They are now incumbents with experience, power, and allies.

Inclusive rules elect a broad variety of reps and thus invite a wide range of candidates and issues, and a great turnout of voters – Australians see 90% vote compared with the USA's 50%. **Turnout** is high also because 83% of the voters help winners. Quota there is 16.6% for each of 5 seats. The quota for 5 US winners is just 50% of each district and thus 50% overall. Other votes are wasted on winner surpluses or on losers; they do not effect the results. Ranking candidates is easy and worthwhile!

Turnout for many US primaries is only 20%. Most voters ignore primaries. But later, many feel the 2 finalists offer little

choice. STV combines the primary with the general election: Each party offers more nominees than it can elect and voters in the general election decide which nominees are best. A liberal rep must compete against similar reps and challengers for the favor of liberal voters. (Sabbatical terms also make elections more competitive, forcing current liberal reps to run against former liberal winners.) This lets voters have real choices.

## PR and Geography

Politicians often gerrymander the boundaries of 1-winner districts to pick voters before voters pick reps. The liberal party designs districts with a liberal majority of voters. In exchange, the conservative party designs districts with a conservative majority. This creates "safe seats": it leaves rivals no chance and voters no real choices. Gerrymanders are easy and common with 1-winner districts but not with a few big multi-winner districts.

PR empowers like-minded people who are spread out over a large region to band together to elect a rep. So representation may be based on issues and values as well as geography. The voters decide which criteria are important.

One-winner districts exaggerate a state's regional differences. In the North a liberal majority may win all of the seats, while in the South, a liberal minority wins none. Then the state's majority party disregards the needs of opposition regions. One-winner rules drive a rep to put pork for her small district above the greater good. In contrast, PR makes parties campaign for votes everywhere, not just in the few, hard-fought swing districts targeted under 1-winner rules. So serious PR parties must serve the needs of voters everywhere.

PR limits the anti-democratic effects of unequal campaign funds. In district or at-large plurality elections, 1 side can win each seat if they catch the interest of the swing voters, and costly TV ads help attract these voters. PR minimizes that. No matter how much money a party spends, it can't win all the votes and all the PR seats. So PR candidates may feel less pressure to raise campaign funds and serve the donors.

## PR and Parties

Another widely used form of Proportional Representation is called **party-list PR**. Its ballots offer voters only a choice of parties, *not* of candidates. A party gets a share of seats equal to its share of votes. The 1<sup>st</sup> name on a party's list of nominees gets the 1<sup>st</sup> seat her party wins. Party leaders usually write the list, so they have immense power over junior politicians and voters. As a result, public, intra-party debate is rare under list PR, which is used in most European countries.

To spread power and broaden the appeal of its list, a party convention could use STV to elect the nominating committee – whose members take turns adding names to the list. (This may let a club offer members a diverse slate of "official" nominees.)

A great advantage of STV is that it needs no parties. That means it can be used by organizations which haven't any, such as unions, clubs, and schools. Many British and Australian Universities use STV. And STV voters are never constrained to parties. They may ignore party labels and mix nominees together, ranking a Blue party candidate 1<sup>st</sup>, an Orange 2<sup>nd</sup>, another Blue 3<sup>rd</sup>, and an independent 4<sup>th</sup>.

STV tallies were slow, costly and rare. But free software now makes tallies easy. The voter's job, simply ranking his choices, is still easy and worthwhile.

In the North Carolina case on page 1, 4 PR districts of 3 reps each would tend to elect 9 or 10 whites and 2 or 3 blacks. 4

## C Center Majorities

The most common problem in an election system is creating a council with an off-center majority and 1-sided policies.

To solve that, a council's decisive **swing vote** should not belong to the left or the right. It should belong to a central chairperson: the Condorcet winner. To give her the *swing* vote, the rule must distribute the other reps fairly and evenly around the center. STV has been adapted to do that.

Loring Ensemble Rule combines Condorcet's rule with STV. If this rule is not used, the Condorcet candidate, surrounded by moderates and centrists, might get few first-rank votes and be eliminated during an STV tally – in spite of the fact that she is the overall favorite. STV would then elect no central candidate, or merely a centrist with a narrow appeal. STV reps then elect the chairperson, usually from a majority coalition's center, off center from the council and the voters.

Loring Ensemble Rule, **(LER)** exempts the Condorcet winner from elimination during STV. Some ballots transfer to her as her rivals are eliminated. In the end she wins a seat surrounded by reps who received ballots from less-central voters.

LERa can use any variation of STV rules for quotas and transfers. It only requires helping the Condorcet winner avoid elimination. LERb elects her before the STV tally. Thus LERb gives the majority group 1 more than its share of seats. Separate votes for the chair and reps also give the majority an extra seat.

All ensemble rules tend to elect well-balanced councils like the 3<sup>rd</sup> pictured on page 1 and the bold names on page 8. But simulation research shows LERa is currently the best rule for consistently making the Condorcet winner the middle rep.

LERa helps find the middle ground even if voters are split 65:35. This council's swing vote must belong to a rep from the majority. But if the majority has no clear favorite, the minority may cast the deciding votes. The chair then knows she owes her victory, in part, to her popularity among minority voters.

### Ensemble Majorities

Electing a central chairperson does not let a centrist minority of voters and their reps dictate the laws. The Condorcet rule lets all voters influence which central candidate wins, and it will elect only about 1 out of 5 council members, so the PR reps may try to form a ring majority with no centrists. As reps discuss an issue, the chair offers her views. If her policy is narrowly centrist, some reps may negotiate a broader policy, balanced with acceptable ideas from their rivals and key ideas of their own.

LER does not give chairs the power and celebrity of European prime ministers or American presidents and mayors. A PM dominates a ruling party. A mayor commands the executive branch. But LER's chair often is not the center of a ruling party; she cannot command; she moderates a dynamic council.

A Condorcet chairperson interested in re-election must try to balance each policy. A narrow or off-center policy exposes her to electoral defeat by a stronger moderator.

All moderate reps have some power in majorities balanced around a chairperson who wants to stay popular on both sides of the center. A 1-sided majority includes only half the moderates. Thus moderates benefit from ensembles. The losers are people whose income or self-worth is measured by war-like politics.

The chair's constituency is the whole populace, while the various reps advocate for narrower interest groups. This accurate democracy makes a council's views as similar to the electorate's as practical. Matching the median is priority 1 because policies

often balance around the views of a council's swing voter.

It is ironic that broad representation 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. A central swing voter can lead a diverse PR council to broaden its policies to include all moderate views.

### Merits of Balanced Policies

Some people fail to see the benefits of ensemble councils. Proponents of STV have said "I don't see any value in a central chairperson." And some who favor elections by Condorcet's rule say they don't see any value in broad representation. But such rules lead to narrow and 1-sided policies.

"Centrist policy" denotes a narrow point of view that excludes other opinions and needs. "One-sided policy" also means ignoring rival ideas. "Compromise policy" implies hostile resistance to opponents on every point and mechanical averaging of values into mediocre or irrational combinations. "Balanced policy" suggests blending the best ideas from each side.

Balanced majorities avoid policy reversals and thus save money and maintain credibility. They avoid policy changes that are random or excessive and thus reduce the game-of-chance and hysteria in politics. They show the rule of reason not of whim, thus inspire confidence in legitimate leadership. They do not let fringe reps steer policies, a common fact in 1-sided majorities.

Popular belief that government exists for the general good not just for the strongest factions is hurt by 1-sided policies. But balanced policies favor all moderates thus increase satisfaction and reduce political conflict. They have broad appeal and thus help the organization attract members.

Stability is not rigidity: Well-balanced majorities and stable policies might seem to increase the risk of continuing a policy even when it stops working. But ensemble stability comes from accurately representing the voters, and not exaggerating or ignoring shifts in their opinions.

**Story** In the Pacific Northwest case, many jurisdictions are politically polarized, split almost 50:50, with no great concentration of voters in the center. The result has been intense hostility between poles, policy reversals and willfully irreversible policies. That pattern would be changed by ensemble rules. Neither pole could hope to capture a legislative majority. Reps would find that to win anything, they must work with the center and some moderates of the other side. The new pattern may change our concepts of voting and government from tools for cultural war to tools for supporting diversity and its freedoms.

### Avoiding Policy Reversals

Flip-flops are the opposite of balanced policies.

**Story** Resource regulations often flip-flop. The developers (or loggers) only have to win once; then the project is built (or the forest removed) and the results last for decades.

Flip-flops give an advantage to those who quickly destroy (by resource pillaging or death squads) not those who slowly nurture (by raising trees or children).

In a related pattern a town enacts tough zoning laws – only to see the county allow developers a free hand. Regulations in the town and county reverse every 5 or 10 years. This benefits quick-buck operators but not sustainable development.

Policy flip-flops give new programs a chance to be tried, but only briefly. And anecdotes about haphazard changes are not as useful as deliberate policy experiments. A balanced council may let each side test its program where its support is strongest. 5

## Calming Political Hysteria

Some issues polarize communities. Even in these cases, Condorcet's rule can find the policy supported by a majority.

*Story* Abortion is a complex ethical issue, but most proposed laws follow a 1-dimensional line with various statutory restrictions added from left to right, liberal to conservative. Candidate *A* says it should be legal, free, and encouraged for unwed teens. *E* says it should not be encouraged. *J* says it should require teen counseling and parental notification. *P* says it should require a 2-day wait for all women and private funding. *U* says it should not be allowed except in cases of rape, incest, or grave risk to the woman's life. *Z* says it should never be legal.

It is likely that 1 of the middle positions is a Condorcet winner, with a narrow yet clear majority over its closest rival. That should not end the ethical debate; activists may still try to persuade others. But it should end the debate over which policy has majority support. Our current electoral and legislative rules fail to reveal the majority position. Instead we see hysteria and threats of policy reversals in every election.

## What Is the Center?

*Story* A professor who's work I admire wrote:

"An excellent [web] page which I will at once add to mine. I disagree with you on the merits of the centre. Sometimes the centre is a messy compromise that is the worst of all worlds. e.g. the UK in Europe. Either the UK goes it alone or tries to make a Federal Europe. Instead we are trying to keep Europe in an unworkable transitional state."

The old system results in unworkable compromises because it is not designed for balance; it is made for 1-sided rule.

Did central politicians design the current policy? No, the parties are highly partisan with powerful leaders. An MP who negotiates independently with the opposition is insubordinate or treacherous. The PM can drop that MP to the bottom of the party list or to an unfriendly hustings. US leaders may cut off a rebel's campaign from her party's money supply.

Parties maintain negotiating (battle) positions. The resulting policy is a *grudging* compromise, which both sides consider temporary. Some MPs hoped it would fail even as they voted for it. There is no central party trying to design a federation, with efficient cooperation and yet some independence.

Perhaps centrist voters cautiously want some federation – after a (French) trial period. Those who disagree must persuade centrists that immediate independence or union is best.

Strategic voting may be the hardest obstacle to workable solutions. Lets say I feel going it alone is best, federation 2<sup>nd</sup> best, and a long transition 3<sup>rd</sup>. If I actually mark federation 2<sup>nd</sup>, I might help it win and an independent England will be lost for my lifetime. So I give 2<sup>nd</sup> to transition, in hopes of keeping alive some chance for full independence, even if it does not yet win.

Some voters favoring federation mirror my strategy. With these strategic seconds *and* some sincere firsts, the unworkable transitional state can win by Condorcet's rule. A stalemate continues until enough voters decide it is hurting everyone.

LER may reduce grudging compromises by electing a chairperson who has an electoral incentive to balance each policy.

## D Resist Manipulation

Often, a few reps can manipulate agenda voting to enact a policy that most reps do not want. In the 1970s, mathematicians proved *every* voting system can be manipulated, sometimes.

The question then was, can some be manipulated more easily or more often than others? Chamberlin, Cohen, and Coombs found "The most striking result is the difference between the manipulability of the Hare [STV] system and the other systems." (in *Journal of Politics* 46 1984: 479-502) STV resists strategic votes, such as punishing a major rival with last rank, by looking only at (current) 1<sup>st</sup> ranks.

But research also found STV poor at electing the most central option; it is often encircled by rivals, gets few 1<sup>st</sup> rank votes, and is eliminated in an early STV step.

For legislative votes, Loring One-winner Rule (**LOR**) enacts the Condorcet winner if there is one. If there is none, and if time bars further discussion, LOR finds the STV winner *and* the chairperson's favorite; then tallies a runoff between these two.

The only way to manipulate Condorcet's rule is to create a tied "voting cycle". (If voter 7 in our example changes his ballot to rank *D* above *C*, we find a voting cycle in which *D* beats *C*, *C* beats *B*, and *B* beats *D*.) STV is manipulable rarely. A chairperson's ballot and a 1 against 1 runoff are not manipulable.

For LOR to fail, Condorcet, STV, and the chair all must fail to pick the central option. The chance of that is less than the chance of failure for the best element of LOR.

A rep casts 1 preference ballot and all tallies are automatic.

Most formal and informal meetings follow an elimination path similar to STV. Thus, like STV, they risk missing the most central option. (But even the simple show of hands can make 1 on 1 tests: *A* versus *B*, the winner versus *C* and so on. The final winner must be tested against all rivals: Test *C* against *A* even if *A* had lost to *B*.)

## Merits of Preference Ballots and LOR

Yes-no ballots promote false dichotomies and social polarization. Preference ballots let reps rank many versions of a bill. This cuts sequence effects and tricks such as freeloader and killer amendments. It speeds voting and reduces deadlocks.

*Story* The US faces a budget crisis as baby-boomers retire and pension payments overwhelm tax payers. Each solution has support but none has a majority so no action has been taken. Most reps say this deadlock is worse than any proposal. Condorcet's rule would enact the 1 policy which beats each rival.

A vote to omit the "no change" option from the ballots unfairly puts 1 policy, the status quo, against all rivals at once, not 1 at a time. On the other hand, super-majority rules such as consensus unfairly aid whatever policy happens to be the status quo. It may have evolved by chance, managerial fiat or accommodation to past conditions. Such bias should go only to preserving a constitution. (Changing congressional election rules does not require changing the U.S. constitution. Some states used primitive, at-large plurality rules in the 1800s.)

**1950** German's parliament has reps from 1-winner districts and reps from party-list PR. This is almost an ensemble but: The districts are not huge and heterogeneous; they use plurality rule so off-center parties win most districts. These reps do not form a central balance point for majorities. Instead, the largest party usually forms a ruling majority with a minor party – excluding the 2<sup>nd</sup> largest party from decision making. 6

## E Empower Everyone

Most democracies recognize the minority citizen's right to vote and the minority voter's right to representation. But even in democracies with PR, ruling majorities have allowed only themselves to allocate funds. For too many people, representation never leads to power. We may yet evolve a limited right to proportional spending of discretionary funds by *all* reps.

Loring Allocation Rule (**LAR**) uses Condorcet's rule to fund central winners and a process like STV to fund diverse winners: A rep's **weight** is the budget she is accountable for allocating. She **ranks** priorities *and* marks Preferred Budgets. Her PB / the **quota** of ballots is the amount her ballot **offers** to an item.

If her \$ vote for A is \$300 and the quota is 10 offers, her offer is \$30. If A gets its quota of 10 offers, its total is the average \$ vote (the same as if the \$ votes had been totaled and *then* divided by the quota). The total offers are the item's budget.

Offers combine the item's budget *and* its quota of supporters. These prove the intensity and breadth of support, to pay for the item and to qualify it as a *public* good. The quota and the minimum \$ vote are set in the by-laws.

Her ballot offers money to its top-rated items, as many as her account can afford. LAR suspends and transfers offers from the weakest items 1 at a time. It also transfers surplus votes until all funds go to items with exactly a quota of votes.

### Merits of Proportional Spending

Fair-share Spending (**FS**) lets big groups within a city fund their own projects without new layers of taxes or bureaucracy. In a city-wide vote, each neighborhood or interest group has money to fund a few school and road improvements. City taxes then pay for the winners as the school or road departments administer the contracts. Every group has spending power; none is shut out. This makes (hidden) empires less profitable.

When the majority directs all discretionary spending, their last allocation adds little to their happiness. After they spend \$900... on their favorite projects, the next \$100... funds a low priority. But that \$100... could fund the top priority for a large minority – making the minority much happier.

In economic terms, distributing a small amount of spending power increases the utility value purchased, and it distributes opportunities and incentives as well. In political terms, a more equitable distribution promotes legitimacy, compliance, and co-operation. The organization serves and appeals to more people.

Fair, efficient rules may increase respect for public funding. That may re-balance our private affluence and public squalor. Organizing buyers does not reduce incentives for competitive pricing, efficiency, innovation and investment by sellers.

A majority that becomes a minority can still fund some priorities – so their budgets rise and fall smoothly. Most reps contribute to at least 1 project that wins with less than a majority.

As now, some reps may spend public funds on political pork. But with PR and FS, reps can waste only their supporters' share of money; a fact that may discourage pork projects.

A project that violates policies is subject to majority veto. Vetoes ideally occur before the funding vote. But the first group to use FS puts all proposals on the ballot then debates blocking only if a controversial item wins. This avoids many debates. If opponents win, the ballots are tallied again without the item.

Fair-share Spending is unlikely to give minorities too much power. Reps use majority rules to enact laws and set agency funding. Only a small part of the budget is discretionary and thus available for proportional spending on projects. Finally, most FS funds will be spent by the majority.

Limited as it is, the right to spend some revenue is a major expansion in the *concept* of democracy, similar to earlier expansions in the right to vote and the right to representation.

## Goal Review

Give voters real choices.

Minimize the effects of unequal campaign funding.

Reduce campaign hysteria, polarization, and regional divergence.

Ensure minority representation without gerrymandering.

Elect a broad variety of representatives, encouraging a wide range of candidates, discussion of issues, and voter turnout.

Enact policies of real majorities by representing all groups.

Elect a central candidate with broad appeal to chair, swing vote, and moderate among advocates for all major groups.

Reduce policy upheavals and deadlocks.

The #1 *goal* is the greatest happiness for the greatest number.

The best *means* are broad, centrally-balanced policies.

To enact inclusive, well-centered policies, councils

need diverse reps, central reps and valid procedures.

The diverse reps form an inclusive and balanced *council*.

The central reps form the balance point for council *majorities*.

The policy rule finds the version with majorities over all others.

Voting can create a form of democracy between adversarial and consensual: Multi-winner rules to elect reps and fund proposals give groups their fair shares of power without letting anyone block action. Policy decisions by ensemble councils and LOR also may follow a less adversarial path than winner take all.

Adopting ensemble rules should please most voters. PR offers many benefits and ensembles add balanced policies.

## Steering Analogy

When it comes to voting rules, a new Mercedes costs little more than an old clunker. The added cost is certainly worth while if the vote influences important budgets or policies. Each dollar spent to count ballots may steer \$1,000 in taxes or dues.

Does your car have an 1890 "steering tiller" or a new, power-assisted steering wheel? Does your organization have an 1890 voting rule or a new, balanced and centered rule?

Today's drivers need the skill to *use* power steering – but they do not need the skill to build a car nor the math and logic to engineer one. Same with voters and voting rules.

To test drive voting rules and see how they perform, download PoliticalSim™ at **PoliticalSim.com**

## Democracy Evolves on the World Wide Web

**elect.htm**: ballot design, how to manipulate plurality rules, ensemble and STV variations, top web sites and readings.

**l\_intro.htm**: why vote in meetings, how to manipulate agenda rules, Condorcet's rule with parliamentary motions.

**q\_intro.htm**: increase and decrease many budgets at once with the Median Voter Process or Hylland and Zeckhauser's rule.

**Humor** Answer GB Shaw. Find more humor in the Quotes & Authors game at [AccurateDemocracy.com/a\\_humor.htm](http://AccurateDemocracy.com/a_humor.htm)

**AccurateDemocracy.com**

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PoliticalSim lets players taste 41 flavors of voting. From Australia to Zuidland there are many ways to elect reps. Each country's voting rule creates hot spots for players on the electoral field. But the strong positions move if the voting rule is changed. Some rules elect only centrists, some elect moderates, and some are just erratic.

Simulated voters ● rank the candidates, giving 1<sup>st</sup> choice to the closest, 2<sup>nd</sup> choice to the 2<sup>nd</sup> closest, etc. Their positions on the screen may represent geography or political opinions.

Players act as party leaders, positioning rival candidates to maximize support. Moving a candidate requires paying for ads and answering interview questions can win donations. Four players controlling candidates in 2 parties create a challenging mixture of conflict and cooperation. Elections may have 2 to 16 candidates, competing for 1 to 7 seats.

Record typical or unusual elections for **lectures**.  
**Research** electorates with up to 4,000 real or simulated voters and 250 candidates.

## Voting Rules!

PoliticalSim allows voting by all the widely used rules such as Australia's STV, Japan's SNTV, Holland's open PR, USA's open primary, England's plurality and France's runoff; plus limited, cumulative, and the now illegal bloc voting rules. You may add your own rules in Excel spreadsheets or macros. Microsoft Excel 4 or higher is required.

## Ensemble Councils versus PR

Simulations show **LERa** is the best way to represent the center and all sides. Here it elects **Al** then **Bev, Di, Fred,** and **Joe**. A *Condorcet Series* elects the 5 candidates nearest the central voter: *Al, Bev, Fred, GG,* and *Joe*. Nobody in the lower-right wins so the council cannot balance around the central voter. *Bloc vote* and *Borda's rule* elect the same off-center council. The *STV* winners? *Bev, Di, Fred, GG,* and *Joe*. No Al!

Only LER has Condorcet centering with STV balancing!

Download PoliticalSim at:

**PoliticalSim.com**

The screenshot shows the PoliticalSim software interface. At the top is a menu bar with options: File, Edit, Format, Window, Organize, Fund, Campaign. Below the menu bar is a title bar that says "Cambridge". The main window displays a 2D scatter plot with many small grey circles representing voters and several larger icons representing candidates: Joe, GG, Bev, Al, Fred, Eve, Di, and Cal. A dashed circle is drawn around the central area, and a text box says "Polls close in 2 minutes". At the bottom of the window, a sequence of election results is shown: "Sequence of LER + wins and - eliminations: +Bev, -Eve, +Fred, -Cal, +Di, -GG, +Joe, +Al". On the right side, there is a "Campaign" sidebar with a list of actions: Hello Office Seekers, Quick Setup..., Survey Voters..., Nominate Candidate, Bid on Rules..., Position Candidates, Interview Candidate, Audit Campaigns..., Voters Shift..., Cast Ballots, Watch Returns..., Save Election..., Get Election..., Run Research... At the bottom right of the sidebar is a small icon of a woman's head.