



Alternate Voting Processes Study

Background Information

PREPARED FOR LEAGUE OF WOMEN VOTERS OF FLORIDA BY THE
LEAGUE OF WOMEN VOTERS OF THE ST. PETERSBURG AREA
P.O. BOX 11775, ST. PETERSBURG, FL 33733 — 2006

Alternative Voting Systems

Facts and Issues: Part III

Here continues information about various voting systems for the LWVF study adopted in May 2005. Parts 1 through 6 are from the LWV of Minnesota study of 2004 when they adopted a position on the subject. Subsequent parts will deal with Florida's voting systems. We thank LWVMN Education Fund for permission to reprint this report.

Issues: Determining the Will of the People

Arrow's Impossibility Theorem

In 1952 Kenneth Arrow won a Nobel Prize in part for proving that there is no such thing as a perfect voting system. He was trying to put together a set of minimal conditions that would consistently translate individual preferences into group preferences, but he found that this was impossible. In other words, there is no voting system that consistently meets Arrow's minimal criteria — except a dictatorship.³⁷ This discovery startled mathematicians and political scientists who have been studying and debating Arrow's theorem ever since.³⁸

Arrow's discovery, according to Harvard University government professors Kenneth Shepsle and Mark Bonchek, suggests that systems of combining individual votes into a group choice or winner is not as straightforward as it seems. No system is consistently fair when the number of voters is large, when their preferences are varied, or when more than two candidates are in the race. They observe that "even

though each individual in the group has preferences that are consistent, . . . this need not be true of the group's preferences"³⁹ This explains why it is so difficult to identify the "true will" of the voter or the "Ideal Democratic Candidate." (See Appendix 1 [page 10] for Condorcet's Paradox.)

Research also indicates that no fixed set of criteria for a "good" voting system exists. Citizens creating a new voting system or changing an old one must set priorities and make tradeoffs among a number of competing goals. Some might want to encourage third parties, some might want to measure the "will of the voters" as perfectly as possible, some might want to reduce factions, some might want a specific kind of representation, and so on.⁴⁰

Instead of focusing on the criteria for a "good" voting system, this study discusses the issues most frequently raised by advocates for particular systems, those mentioned in the literature of mathematics and political science,⁴¹ and those of specific relevance to Minnesota.

Majority Rule

According to the proponents of alternative systems, the most important criterion for any single-winner voting system is that it produce a winner elected by a majority of eligible voters. They point to statements such as that by Noah Webster, who wrote in 1787, "Hence the doctrine, that the opinions of a *majority* must give law to the *whole* State: a doctrine as universally received, as any intuitive truth."⁴² Although the United States Constitution requires a majority of votes to elect the president in the Elec-

toral College and to pass certain bills in Congress, it does not require the states to adhere to the principle of majority rule. Nevertheless, this doctrine is so deeply embedded in the minds of most citizens that they are often surprised to learn that a candidate can be elected by a minority of the voters; however, some people see no problem when a candidate wins an election with less than a majority of the votes.

Almost two hundred years after Webster’s affirmation of rule by the majority, the Vermont House of Representatives commissioned a study that endorsed Instant Runoff Voting for the state of Vermont. This commission stated that the Plurality voting system contains “a fundamental defect that violates the most basic precept of democracy: majority rule” because a candidate can be elected with fewer than 50 percent of the votes.⁴³

Asserting that Instant Runoff Voting will solve this problem, the Center for Voting and Democracy says; “IRV advantages the majority, since it ensures that a minority of voters can never defeat a candidate supported by a majority.”⁴⁴ The Vermont study adds that this “is the main attribute of IRV that prompts this Commission to recommend its adoption for all statewide elections.”⁴⁵

Promoters of Approval Voting suggest that it will generally elect the candidate with the greatest overall support.⁴⁶ Robert J. Weber of Northwestern University in Illinois presents a mathematical proof that Approval Voting will usually result in a winner preferred by a majority of the voters. In “a three-candidate setting in which two similar candidates share the support of a majority of the voters.” He believes that Approval Voting more effectively represents the preferences of the electorate in the three-candidate race than either the Plurality or the Borda system.⁴⁷

Donald Saari of the University of California at Irvine uses mathematical proofs to support his claim that

the Borda Count system is much more likely to support majority rule than the other systems.⁴⁸ He speculates that the Borda system is least likely to produce a voting paradox, which occurs when “the voters do not elect who they really want,” adding that there are many examples of actual elections in which this has happened.⁴⁹ Saari discusses several scenarios that give rise to a variety of voting paradoxes. (See Appendix 2 [page 10] for a real-world example of a voting paradox.)

Fans of the Condorcet system say that in most situations, this system will produce a winner who has a majority of the votes and will be “the candidate who is preferred by a simple majority of voters to *each* of the other candidates in pairwise contests, provided that such a candidate exists.”⁵⁰ This winner is called the “Condorcet candidate,” and even champions of other systems acknowledge that such a Condorcet winner is more truly representative of the will of the majority and therefore more “democratic.”⁵¹

Christopher Gilbert, political science professor from Gustavus Adolphus College, St. Peter, Minnesota, believes that the Condorcet system is interesting in theory but perhaps too complicated in practice. The Borda Count system might be a better choice for people concerned about determining the precise will of the majority because it is easier to count.⁵²

Winning with a minority of votes is not a new occurrence. In 17 presidential elections, including the election of 1860 won by Abraham Lincoln, the winner received fewer than 50 percent of the popular votes.⁵³ One could argue that even though these candidates received less than a majority of the popular vote, they did receive a majority of votes in the Electoral College, thus not violating the principle of majority rule.

In Minnesota, it is not unusual for officials to win elections with a minority of the votes. Minnesota

Year	Pres.	U.S.Sen.	Gov.	Sec. State	State Audit.	State Treas.	Atty. Gen.
1998			Ventura 37.0%	Kiffmeyer 46.8%	Dutcher 49.1%	Johnson 45.4%	Hatch 47.8%
2000	Gore 47.9%	Dayton 48.8%					
2002		Coleman 49.5%	Pawlenty 44.37%	Kiffmeyer 47.56%	Awada 44.63%		[Hatch– majority 54.64%]

governors Jesse Ventura and Tim Pawlenty were both elected without a majority. In 1998, Reform Party candidate Jesse Ventura won with only 37 percent of the votes, defeating both of the major party candidates. In 2002, Republican Tim Pawlenty became governor with 44 percent of the votes, with Democrat Roger Moe earning 36 percent and Independent Tim Penny receiving 16 percent. Between 1998 and 2002, 11 statewide offices were won with a minority of the votes and one with a majority.⁵⁴

Even though some believed that these elections did not measure the “true will” of the voters, few people thought they were unfair, given the rules set out by the Plurality voting system.

“Sincere” vs. Strategic Voting

Supporters of each of the voting systems discussed here believe that a voting system should enable citizens to “honestly vote according to their consciences.”⁵⁵ They claim that their particular system will promote “sincere” voting rather than strategic or tactical voting, which they consider “gaming” the system. They prefer a voting system that discourages people from voting for anyone but their “true favorite.”

Douglas Amy, professor at Mount Holyoke College in Massachusetts and author of *Real Choices/New Voices*, explains the importance of voting sincerely: “To produce a true mandate voters must be voting sincerely — that is, they must be casting a vote for a party that truly represents their own specific ideological and policy preferences.”⁵⁶ If in 2000, for example, one’s true favorite was Ralph Nader, some would say that voting for anyone else would be insincere.⁵⁷

Proponents of alternative voting systems criticize the Plurality voting system, in particular, for encouraging strategic voting, saying that people who want to vote for third party candidates may feel that they must settle for the “lesser of two evils” by voting for their second choice. They fear that a sincere vote for a minor party candidate may lead to the election of a candidate they dislike. The minor party candidate may become a “spoiler” in the election, contributing to the election of a candidate not supported by the majority of the voters.

Eliminating the “lesser of two evils” choice is one of

the main advantages of the Instant Runoff Voting system, according to the Center for Voting and Democracy: “Voters have every incentive to vote for their favorite candidate rather than the “lesser of two evils” because their ballot can still count toward a winner if their first choice loses.”⁵⁸

Advocates of the Approval system believe that AV encourages sincere voting. Steven Brams and Peter Fishburn argue that Approval Voting is less vulnerable to manipulation than any of the others. In addition, voters don’t have to rearrange the order of their votes or vote for someone they don’t like to keep someone else from winning.⁵⁹

Others argue that the Approval Voting system does not reward honest voting in every situation. Voting for one’s first, second, and third choice candidates without ranking them in some cases can lead to the defeat of one’s favorite candidate because the ballots are equally weighted. Voters cannot indicate a strong preference for one candidate and a weak preference for another.⁶⁰ If enough other people voted for their second choice, that candidate might win. Approval voting proponent Brams admits that this is a valid concern but states that rational voters can use information from polls to help them decide whether to vote for a second or third candidate.⁶¹

Brams speculates that a benefit of sincere voting under the Approval Voting system is that it will make it possible to measure the true level of support of minority party candidates. Election results will be relatively undistorted by strategic voting, so voters and political parties will have access to important information that is unavailable under the Plurality system.⁶² A national example of election results distorted by strategic voting is the presidential election of 1992. Gerald Posner wrote in the *New York Times Magazine* that Perot did not take more votes from Bush and help elect Clinton as many people believe: “In fact, exit polling showed that Perot hurt both parties almost equally, taking roughly the same number of votes from Clinton as he did from Bush. Exit polls also show that more people would have voted for Perot if they thought he had a chance to win — his vote total could have approached 40 percent (Clinton won with only 43 percent).”⁶³

Critics claim that the opposite is the case: the intensity of a candidate’s support will not be accurately

measured with the Approval Voting system because a voter's third-choice Approval vote counts as much as his or her first-choice Approval vote.⁶⁴

One must also keep in mind that each of these alternative voting systems except Instant Runoff Voting is vulnerable to another kind of strategy: "bullet voting." Individual voters (perhaps at the suggestion of campaign organizers) could mark only one candidate or "bullet" vote rather than mark or rank several candidates. Bullet voting would distort the results, and the election system would revert back to the Plurality system.⁶⁵

A simplified example using the Borda Count election system offers a rough idea of how insincere or tactical voting might work in one situation. Imagine that 30 people are on a committee to plan the menu for a high school reunion. The caterer offers them four choices for dessert: rhubarb pie, chocolate cake, vanilla ice cream, and a low-carb bar. They decide to use the Borda Count system to make their decision. Ten of the committee members want rhubarb pie and 20 want chocolate cake. First choice votes count 4, second choice votes count 3, third choice votes count 2, and fourth choice votes count 1. Even though the 10 pie lovers like cake second best, they put it last so they can win the election.

Vote distribution of the 10 pie-lovers:		
First	Rhubarb Pie	40 points
Second	Low-Carb bar	30 points
Third	Ice Cream	20 points
Fourth	Chocolate Cake	10 points

The 20 cake lovers like rhubarb pie second and sincerely put it in second place.

Vote distribution of the 20 cake-lovers:		
First	Chocolate Cake	80 points
Second	Rhubarb Pie	60 points
Third	Ice Cream	40 points
Fourth	Low-Carb Bar	20 points

Total points for each dessert::		
First	Rhubarb Pie	100 points
Second	Chocolate Cake	90 points
Third	Ice Cream	60 points
Fourth	Low-Carb Bar	50 points

One could argue, however, that the rhubarb pie fans are not insincere but practical, and that the issue of "insincere" votes or strategic voting is relatively unimportant, given the fact that it's difficult to measure a voter's "sincerity." Some think that in a three-person contest, voters who decide not to support their first choice because that candidate is a long shot are making a rational choice rather than gaming the system. They are merely making compromises, which are frequently necessary in a democracy. As long as everyone knows the rules of the game, then an election system's susceptibility to manipulation may not be a valid criterion on which to evaluate it.⁶⁶ After all, as Donald Saari points out, "All non-dictatorial methods involving three or more alternatives can be manipulated."⁶⁷

Borda himself was aware of the problem with strategic/insincere voting. When someone pointed it out, he replied optimistically, "My system is only for honest men."⁶⁸

"Wasted" Votes

In voting system terminology, "wasted" votes are those that do not go toward the election of any candidates. Whether or not voters believe that their vote has been "wasted" depends on their definition of the term. If voting for a candidate who loses means one's vote is wasted, then as many as 49 percent of the voters will feel that way in any election that requires a majority of the votes to win. Most often the term is used to mean votes for a third party candidate who has little chance of winning.⁶⁹

Some people might choose to vote for a candidate they know will lose in order to lodge a protest or stand on principle. A strong third party showing may, for example, cause major parties to incorporate new issues in their platforms. Dennis Thompson, Harvard professor and author of *Just Elections*, says that "protest votes in sufficient numbers, can send a powerful message and can have an effect on campaigns and elections in the future."⁷⁰ Issues once deemed immune to legislative change were first proposed by third parties: abolition of slavery, minimum wage, women's right to vote, social security, end to child labor, and the 40-hour workweek. They are now accepted laws of the land.⁷¹

Advocates of Instant Runoff Voting assert that re-

ducing the number of “wasted” votes is one of the advantages of IRV. According to Ted Halstead and Michael Lind, voters realize that if they vote for a third party candidate in the current Plurality system, their vote will probably be wasted. The authors explain that voting for a third party so easily backfires that voters in a Plurality system “are offered a stark choice between voting for one of two major national parties or not voting at all. Increasing numbers of Americans have chosen the latter option.”⁷²

The Vermont Commission points out that under Instant Runoff Voting, when a first choice candidate is eliminated, the vote is reassigned to the second choice candidate that the voter designated, reducing the chance that the voter’s vote will be “wasted.”⁷³

Advocates of Approval Voting also speculate that voters won’t have to worry about “wasting” their votes with this system. If their most preferred candidate has little chance of winning, they can vote for him or her and a more viable candidate without worrying about “wasting” their vote on the less popular person.⁷⁴

Voter Turnout

Many people are very concerned about the issue of low voter turnout, blaming the Plurality system. Some speculate that changing to an alternative election system will bring more voters to the polls, but this claim is difficult to verify, according to a study by political scientists about the effects of voting systems on turnout. The authors found that factors such as cultural differences, registration barriers, weak parties, non-competitive races, the perception that one’s vote doesn’t count, and so on may depress voter turnout. State-to-state comparisons of turnout are difficult as well because states have different ways of tracking turnout, and so far no significant history of alternative voting systems exists in this country for which state-to-state comparisons would be possible.⁷⁵

The Minnesota Secretary of State’s office explains that Minnesota’s turnout statistics may appear as percentages of three different numbers:

- Voting-Age Population. This number comes from Census Bureau estimates and includes non-citizens, felons, and those under “guardianship of the person.”
- Voting-Eligible Population. This number does not include non-citizens but does include felons and those under “guardianship of the person,” even though they can’t in fact register. It is not an exact number.
- Population registered to vote.⁷⁶

Despite these problems, the study found that changing to an alternative voting system increased voter turnout by about five percentage points. The authors examined the effect of cumulative voting* on turnout in about 100 communities across the United States, mostly in Texas, some in Alabama, New Mexico, and a scattering of others, including one in South Dakota.⁷⁷ One of the authors of the study, Shaun Bowler of University of California Riverside, said, “The best we can tell is that changing the electoral system will boost turnout — probably somewhere in the low single digits. It’s a consistent finding. So far as I know all studies show an increase is likely. None show a decrease.”⁷⁸

The Vermont Commission speculates that IRV would increase turnout by pointing to mayoral elections in Ann Arbor, Michigan, in the 1970s that were conducted using IRV. When an election had only two credible contenders, voter turnout was low. When a third party candidate was added, voter turnout jumped 28 percent. It adds that other nations that use IRV have far higher levels of voter participation than Vermont does, but other factors may be responsible for this as well, such as the day (or days) of the week on which elections are held or whether voting is required by law.⁷⁹

Appendix 1: Condorcet’s Paradox

A mathematics text provides an example of Condorcet’s voting paradox that shows why it is so difficult to identify the “true will of the people”: “In general, the word *paradox* is applied whenever there is a situation in which apparently logical reasoning leads to an outcome that seems impossible. . . .” Condorcet considered the following set of three preference lists and found that they indeed lead to a situation that seems paradoxical:

Rank	Number of voters (3)		
First	A	B	C
Second	B	C	A
Third	C	A	B

The text continues, “If we view society as being broken down into thirds, with one-third holding each of Condorcet’s preference lists, then society certainly seems to favor A to B (two-thirds to one-third) and B to C (again, two-thirds to one-third). Thus, we would expect society to prefer A to C. That is, we would expect the relation of social preference to be *transitive*: If A is ‘better than’ B, and B is ‘better than’ C, then surely A is ‘better than’ C. But exactly the opposite is true. Society not only fails to prefer A to C but, in fact, rather strongly prefers C to A, (i.e., by a two-thirds to one-third margin)! With, say, 10 alternatives, a similar phenomenon can occur with ‘two-thirds’ replaced by 90 percent.”

“That fact that two-thirds of society can prefer A to B, two-thirds prefer B to C. and two-thirds C to A is known as *Condorcet’s voting paradox*”¹¹⁵

Alternative Voting Systems

League of Women Voters of Minnesota

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League of Women Voters of Florida

Issues Related to Alternative Voting Systems for the State of Florida

Appendix 2: A Real World Voting Paradox

Donald G. Saari, a mathematician at the University of California at Irvine, explains a real-world voting paradox that occurred in a 12-way general election in the 1991 Louisiana gubernatorial race: “Republican David Duke, a former Ku Klux Klan grand wizard, received 32 percent of the vote, while Democrat Edwin W. Edwards, a former governor who bragged about his gambling and had been indicted twice on federal racketeering charges, got 34 percent, both eking out more votes than the incumbent Republican governor Charles E. (Buddy) Roemer, who received 27 percent. ‘It was reasonable to suspect that incumbent governor Roemer would have beaten either of them in a head-to-head race,’ says Mr. Saari.

“The result was a widely disparaged “Krook-or-Klan” runoff. Bumper stickers supporting Mr. Edwards read ‘Better the lizard than the wizard.’ Mr. Edwards won the runoff with 61 percent of the vote. A poll found that almost half of the voters who chose Mr. Edwards said their main motive was to defeat Mr. Duke.”¹¹⁶

* **Cumulative voting (accumulation voting or weighted voting):** This is a multiple-winner voting system intended to promote proportional representation. In this system, a voter facing multiple choices is given X number of points. The voter can then assign his or her points to one or more of the choices, thus enabling one to weight one’s vote if desired. Unlike preference voting where the numbers represent ranks of choices or candidates in some order (i.e. they are ordinal numbers), in cumulative votes the numbers represent quantities (i.e. they are cardinal numbers). This form of voting is advocated by those who argue that minorities deserve better representation, and thus could (by concentrating their votes on a small number of minority candidates) ensure some representation from the minority.

Alternative Voting Systems — Facts and Issues: Part III

NOTES:

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- 43 "IRV Promotes Majority Rule in Single-Seat Elections." Final Report of the Vermont Commission to Study Instant Runoff Voting. (January 1999) Center for Voting and Democracy. <http://www.fairvote.org/irv/vermont/11simple.htm>
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- 47 Robert J. Weber, "Approval Voting." <http://www.kellogg.nwu.edu/faculty/weber/papers/approval.htm>
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- 64 "Alternative Single Winner Systems."
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- 115 Garfunkel, *For All Practical Purposes*, 422-423.
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