Use of Preferential Voting in DØ Elections

DØ Spokesperson Election Procedure Review Committee

April 17, 2002

Introduction

It is generally understood that in multi-candidate elections, Plurality Voting, in which the candidate receiving the most votes in a one-step election wins, irrespective of whether that candidate receives a majority of the votes cast, will frequently yield an outcome with which a majority of the voters are dissatisfied. This situation can easily arise when voters, united in their opposition to the winning candidate, nevertheless differ in whom among the other candidates they would most prefer to see elected.

The current DØ Spokesperson election procedure addresses this shortcoming of simple Plurality Voting by requiring multiple runoff elections until one pair of candidates receives a majority of the votes cast in that election round. Up to four rounds of voting may be required in close elections: an initial round to select the top five individual candidates; a second round to select the top three pairings from the up to ten possible pairings of the top five candidates; and up to two runoff elections to reduce the field from three to two, and then from two to one (the process stops if one pairing receives a simple majority after either round two or three).

However, the present DØ procedure is very time-consuming and there is strong desire on the part of many in DØ to substantially speed up the overall election process. The Spokespersons Election Procedure Review Committee therefore considered an alternative election procedure involving just two steps: an initial election involving n candidates, followed by a single runoff election between the top two finishers in this election. This simplified procedure has two principal disadvantages:

1. It remains time-consuming since two sequential elections still must be conducted.
2. On occasion, relatively few votes may separate the second place finisher and the rest of the field, thereby eliminating from further consideration, on statistically marginal grounds, candidates who might actually have won a runoff election had they been allowed to participate.

Preferential Voting

Fortunately, there exists an alternative voting procedure, known as Preferential Voting (among other names), that addresses both of these disadvantages. Many of you are probably familiar with this voting system, since it often is used in elections where $n > 1$ people must be elected from $m > n$ candidates, but the advantages of this method extend down to $n = 1$. The basic idea underlying Preferential Voting is that voters provide an ordered list of their preferences, not simply their top choice. The availability of this more detailed information allows multiple runoff elections to be held based on just the original ballot, thereby greatly speeding up the overall election process while avoiding the premature elimination of candidates with strong voter support.

The vote tallying process under Preferential Voting proceeds as follows. Each voter's top remaining choice is awarded one vote in each round of counting and the candidate receiving the fewest votes in each round is eliminated from ballots tallied in subsequent rounds of voting. This process is repeated until one candidate receives a majority of the ballots cast in that round. An illustration is probably more illuminating than providing a more detailed verbal description of the voting methodology.

Consider for simplicity a three-candidate election. A total of 299 preferential ballots are cast, subdivided as follows among the six possible ways of ordering the three candidates: A, B and C:

First Choice	Second Choice	Third Choice	Number of Votes
A	B	C	60
A	C	B	50
B	C	A	60
B	A	C	78
C	A	B	43
C	B	A	8
		TOTAL	**299**

These ballots lead to the following first round vote count:

	A	**B**	**C**
	60		
	50		
		60	
		78	
			43
			8
TOTALS	**110**	**138**	**51**

As the candidate receiving the fewest votes in this round, **C** is eliminated from future balloting, yielding the following revised subdivision of the 299 ballots:

First Choice	Second Choice	Third Choice	Number of Votes
A	B		60
A		B	50
B		A	60
B	A		78
	A	B	43
	B	A	8
		TOTAL	**299**

These revised ballots lead to the following second round vote count:

	A	**B**	**C**
	60		
	50		
		60	
		78	
	43		
		8	
TOTALS	**153**	**146**	

Candidate **A** has received a majority of the votes cast and therefore wins the election. Thus, in this example, even though candidate **B** had the most first round votes, candidate **A** wins the election because of the strong preference for candidate **A** relative to candidate **B** on the part of voters whose first choice was candidate **C**. This is the function of runoff elections—giving the supporters of eliminated candidates a second chance to register with effect their preferences among the surviving candidates.[§]

Proposal

Intuitively, the optimal way to reduce a field of n candidates to one final candidate is to hold $(n - 1)$ sequential runoff elections, each time eliminating the candidate receiving the fewest votes. Running actual runoff elections for this purpose, however, is very time-consuming, as recent DØ elections have demonstrated, unless n is small (some would argue that $n = 3$ is already large). Use of Preferential Voting allows these runoff elections to be held virtually (the voting procedure is sometimes known as the "instant runoff" method), using initial ballots consisting of preferentially ordered lists of the candidates rather than just each voter's top choice. It is therefore proposed that this voting technique be adopted by DØ in selecting future Spokespersons.

[§] Additional illustrations of the advantages of Preferential Voting will be provided during the IB discussion.