9 Counting votes – RCV [6 Dec 2019]

This is the promised discussion of counting ballots in a system of Ranked Choice Voting (RCV) discussed in the prior post.

First story:--Consider a sports club that is voting on a location for its annual picnic. Among four alternative locations, the meadow wins the balloting. After the vote, someone suggests yet another location. When the vote is repeated with five locations, two votes shift away from the meadow; the baseball field emerges as the winner. Why should a seemingly irrelevant, unpopular alternative change the location of the picnic? In RCV, the two unsuccessfully shifted ballots revert to their second choices, restoring the original winner. ***The two "unsuccessful" voters have the satisfaction that their votes did contribute to the result they wanted if they could not have their first choice*.** **Their votes were not wasted.**

Second story:--Consider a mathematical streamlining process. This story is set in a country where all taxes are paid with coins that are accurately equal in weight. There is a reliable report that the tax collector in one province has rubbed off exactly one gram from *every* coin he submitted. The problem is to learn which collector cheated. The long solution is to weigh a coin from every province. The short solution is sampling: since counting is faster than weighing, take one coin from the first province, two from the second, and so on; weigh all those selected coins in one single step. The number of grams shortage is the ordinal number of the faulty province. (For example, if the second province is at fault, the shortage is two grams because there are two altered coins in the sample.)

This story illustrates efficient data collection. A *single* test (weighing) suffices because the *sample* is designed for that method of analysis.

Third story:--A single-elimination tournament bracket starts with a simple lineup of all the teams. Of every pair of teams in the first level, only one progresses to the second level. The process of elimination continues until one team reaches the final level. In this system there is the nagging possibility that a team was eliminated in the first level by an unusual circumstance. In a different sequence of contests, that team might have reached the top. A much more thorough testing process is the round robin in which every team plays every other team (usually twice, once at home and once away). The final winner is based on accumulated successes, not single instances.

Suggestion:--The first story encourages finding an intuitively satisfying outcome with no abrupt surprises. The second story motivates thoughtful planning of a process for reaching the outcome. It compresses the research into a single selection step; it is unitary. The third story serves as a model for scoring and ranking based on the most complete available data set.

Combining the stories might lead to this formula: Give every candidate a score that is the inverse of ballot ranking, then find the highest total score. If there are four candidates, the highest (first) ranked candidate scores four and the lowest (fourth) ranked candidate scores one. (In an incomplete ballot, unranked candidates receive no score.) The total score is a measure of overall support for a given candidate, making this counting system logically appropriate.

Let us soon implement an agreed form of RCV that will deliver the advantages laid out in the prior post: (1) avoiding wasted ballots, (2) eliminating repeat elections, (3) expanding discourse among multiple viewpoints. This is our easiest step to better democracy.