Transcript

Out for the Count: The Mathematics of Voting Systems

Counting: Borda points system

Andrew Potter: Did you manage to declare a winner? Under the Alternative Vote system, the winner is Candidate B! After Round 1, we have the same situation as in First Past The Post. Since no candidate has a majority, we eliminate Candidate D, since they have the fewest votes, and redistribute based on second-preferences.

After Round 2, we still don't have a single candidate with a majority of votes, so we need to eliminate a candidate. There is a tie between the two candidates with the fewest votes, but Candidate A has fewer first-preference votes, so we eliminate Candidate A. We then redistribute Candidate A's votes based on the next preference votes. After Round 3, we see that Candidate B has a majority of votes, so Candidate B is declared the winner!

What about fairness, though? What did you think? Is the Alternative Vote system fair or not? Again, this is a matter of opinion and debate. Some people like the fact that the rounds continue until there is majority support for one candidate, so we avoid the situation we had with First Past The Post. On the other hand, some people don't like the fact that not all of the voters' lower-ranked preferences are taken into account – in our example, the voters for Candidate C never had their lower-ranked preferences taken into account.

The Alternative Vote system is used in many countries and situations, though. It is sometimes called the "instant runoff" system, because it is mathematically equivalent to holding several rounds of voting where the lowest-ranked candidate is eliminated. In that sense it saves time, money and effort of going to the polls multiple times. The Alternative Vote system is used to elect the Australian House of Representatives, the President of India and the President of Ireland. In 2011, UK voters rejected in a referendum, a proposed change from First Past The Post to Alternative Vote for Westminster elections.

It's also worth pointing out that there are variations on this system in the way that ties are dealt with. When we had a tie, we eliminated the candidate with the lowest number of first-preference votes. Other variations eliminate ALL candidates tied in last place and redistribute all of their votes.
The next system we will look at will try to overcome the objection to Alternative Vote, by counting every voter's preferences, and assigning them a points total. This is called the Borda Points system with arithmetic weighting. I suggest you get a piece of paper and something to write with to keep track of the points!

We're going to take each vote individually and assign 4 points for a first-preference vote, 3 points for a second-preference vote, 2 points for a third-preference vote, and 1 point for a fourth-preference vote. I suggest keeping a tally like this. We'll do this for every single vote, and whichever candidate has the most points in the end, wins! Over to you! Again, don't forget to consider whether you think this system is fair or not.