We use cookies to ensure that we deliver the best user experience of our website. If you would like to, you can change your cookie settings at any time. Continue

From first past the post, to unanimous agreement and everything in between: How you vote matters.

Posted on Tuesday 4th December 2012

During the course of November, four high-profile votes have taken place: the US presidential election; the Police and Crime Commissioner elections; the vote on women bishops and the EU budget negotiations. Each of these uses a different system: the US elections uses an obscure hybrid of proportional representation and First Past the Post; the PCC elections which, unbeknownst to most of the population since they didn't vote, used a minor modification of the Alternative Vote that was rejected in a referendum in 2011; the vote on women bishops had only two options but required a 'supermajority' of two-thirds in each of the three Houses to pass, achieving "only" 64% in one of them; the EU budget negotiations require unanimous agreement, which is extremely difficult with 27 members.

Seeing these various systems deployed in such a short space of time leads us to re-examine their merits. Of course, unanimous agreement is not a valid system for large populations; supermajorities often mean that the views of the body as a whole, enshrined in its legislation, lag behind the views of its individuals, so is ill equipped to deal with fast-changing society, as was evidenced by votes on women bishops, which rejected the proposals despite the votes being 90%, 77% and 64% in favour of the change.

The US presidential votes are bizarre in that each state uses First Past the Post to choose the winner, and then the states are given a differing number of votes in the Electoral College to decide the President. This means that California -- where Obama won with 60% of the vote -- assigned all 55 of its members of the Electoral College to Democrat, and the 37% that voted Republican were unrepresented. This concentrates power in a number of swing states, the analogues of marginal constituencies in the UK, and results in a distortion of the popular opinion that the candidates are meant to represent. The same charge, to a slightly lesser extent, can be levelled at the UK parties.

Finally, the PCC elections were held using a variant of the Alternative Vote system, called the supplementary vote, but were notable for a variety of other reasons. The turnout was pitifully low and of those, a sizeable proportion of the voters turned out just to protest by spoiling their ballots. Highlights of the spoiling include votes for Robocop and Commissioner Gordon from Batman, and numerous statements of the form "this is a waste of money" or "I don't have enough information on the candidates to decide".

When trying to compare voting systems, it helps to have some guidelines from the mathematics of voting to help make a decision about the pros and cons of the various systems. The first thing to say is that there is no such thing as a perfect voting system. It is mathematically provable that whenever you have at least two voters and at least three candidates, every voting system suffers from flaws: one such a flaw is tactical voting -- voting for a candidate other than your favourite – which is unavoidable in any voting system.

However, that isn't to say that all voting systems are as good as each other. The Alternative Vote (AV), for example, is better than First past the Post (FPTP) in almost every way. Pretty much the only argument in favour of FPTP is that it generally results in a strong, single-party, government, but it's by no means obvious that this is a good thing in the first place, and anyway the current Conservative-Liberal Democrat coalition proves that FPTP doesn't guarantee this.

If the majority of the population would rather Party A be elected than Party B, it is reasonable to believe that party B shouldn't win, regardless of how many other parties there are. While AV works like this, this idea fails spectacularly with FPTP, where governments are frequently elected despite most people preferring another party. This happens so frequently it has its own name: splitting the vote. As a fairly recent instance of this, Al Gore would have won the 2000 US presidential election, taking Florida, if Ralph Nader had not split the left-leaning vote.

Alternative Vote (or very similar versions of it) is used to elect all three major UK party leaders, the Mayor of London, the First Minister of Scotland and the Police and Crime Commissioners, but inexplicably was opposed by both Labour and the Conservatives for general elections, virtually ensuring that the single most fundamental proposed change in democracy in the United Kingdom since 1950 (where the last constituencies that used systems like AV were abolished) was rejected.

The campaign of misinformation and misunderstanding, primarily conducted by the two major political parties and the press, which preceded the AV referendum, was nothing less than shameful. One of the most persistent falsehoods about AV is that some people get more votes than others. Yet they would not say the same about the following system: everyone goes to vote, and then the person who gets the fewest number of votes gets eliminated. Then everyone comes to vote again, and the person with the fewest number of votes is eliminated again, and so on until someone gets at least 50% of the vote. This is exactly how AV works, except that rather than dragging everyone back to the polls every couple of days you tell the counters how you would vote in each round. A two-round version of the previous system is used in the French presidential elections, but nobody there complains that some people get two votes.

The FPTP system is in essence the worst acceptable voting system, in the sense that the only widely used, less democratic system, is a dictatorship.

Dr David Craven, Royal Society Research Fellow and Birmingham Fellow, School of Mathematics

© University of Birmingham 2014