Community-centred democracy: fine-tuning the STV Council election system

Denis Mollison - Sept. 2017, revised March 2018

Introduction

The proportional system of STV has worked well for Scotland's council elections (Curtice 2012[1]), but after three elections it is time for a review, to examine whether the system could be fine-tuned to work better. Wards could be better fitted to natural communities; and elements of unfairness sorted out, particularly those associated with the ordering of candidates on the ballot paper and with fixed quotas.

The following five recommendations address these issues. They would all make minor but worthwhile improvements to our local democracy. They require changes to how we draw ward boundaries, how we list candidates on ballot papers, and the precise STV method used.

Recommendations

1. Fit wards to natural communities much better, by allowing 3, 4 or 5 member wards, and variations from parity of up to 15%.
2. For the same reason, in isolated and sparse areas allow 2 member wards, and somewhat greater flexibility in parity. In extreme island cases, consider allowing 1 member wards.
3. Vary the order of candidates on the ballot paper. Consider allowing voters to express equal preference.
4. Replace the currently used STV count system (WiG) with the Meek system, which has advantages in fairness and transparency.
5. Change the methodology for deciding the number of seats on each council so that it depends more consistently on the council's total electorate.

The various issues and recommended solutions are discussed in turn below.

[1]ERS Report '2012 Scottish Local Government Elections', https://www.electoral-reform.org.uk/wp-content/uploads/2017/06/2012-Scottish-Local-Elections.pdf

1. Fitting wards to natural communities

Consultations show that the public care more about making wards correspond to communities than they do about exact parity in the electors/seats ratio. If we make fitting natural communities a priority, we need a methodology that allows wards of any size (number of electors) within a reasonably wide range. There are two considerations here: how wide should that range be? and how much variability in parity do we have to permit if any size in the range is to be allowable for a ward?

As to the range of sizes needed, if the smallest allowable wards have 3 councillors, we need to allow wards with up to 5 councillors, so as to accommodate communities that are too large for a 4-member ward but not large enough for two 3-member wards; note that misfitting such a community will inevitably have knock-on effects on at least one of its neighbours[2].

As to variations in parity, the most awkward situation is where a community's entitlement is around 3.5 councillors: if it is to be allowed as a ward, it must have either 3 councillors or 4; either way, it will differ from its entitlement by nearly 15%.

If then we relax the parity limit to ± 15% and allow 3, 4 or 5-member wards we can fit wards to communities very much better[3]. Details of how this more flexible approach could be implemented are given in Appendix A.

2. The special problem of sparse and isolated communities

In areas with sparse or isolated populations, wards with 3 or more seats may be so extensive or fragmented that it is very difficult for councillors to represent them properly. For example, it takes over 3 hours to drive across Ward 1 of Highland Council in Sutherland. The problems with islands are significantly worse: the journey time across Ward 1 of na h'Eileanan an Iar (which includes Barra and South Uist) is less than 3 hours, but depends on a 5 times a day ferry.

Variation down to 2 member wards rather than up to 5 is democratically not ideal, as it gives significantly less proportional outcomes and often requires going beyond the ± 15% parity limit, so is only recommended for the special geographical circumstances of isolated and sparse areas. In exceptional circumstances it might make sense to allow a 1-member ward.

Appendix B discusses the details of how allowing wards with less than 3 mem-

[2]Musselburgh in the 2014 review provides a good example of this situation.

[3]Interestingly, the international Venice Commission recommend a limit on departures from parity of '10% or in special circumstances 15%' - though they give no reason for choosing these particular figures.

bers might work, illustrated with discussion of na h'Eileanan an Iar and two examples of islands within the largely mainland councils of Argyll and Bute and North Ayrshire.

3. Problems where a party stands more than one candidate.

One of the advantages of STV is that where a party stands more than one candidate it should be the voters' preferences that decide which of them (if any) is elected. Three problems have arisen in this context, which give rise to varying degrees of unfairness as between candidates, voters and parties.

First, there is 'donkey voting', where voters through laziness or indifference rank the candidates in the order that they appear on the ballot paper. Voting analysis suggest that around 15-20% of voters behave like this, leading to substantial unfairness between candidates of the same party. The best answer to this is to vary the order of such candidates on the ballot paper. For example, if there are 3 candidates from the same party, their positions on the ballot would be varied through the 6 possible permutations as the ballot papers are printed. It might be helpful for voters if candidates of each party appear in consecutive order on the ballot paper. Apart from these constraints the ordering of candidates for each ward should be random.

Second, a significant number (around 1%) of ballot papers have to be disallowed because the voter has placed the same number, or an 'x', against each of the party's candidates.

Lastly, both in order to mitigate donkey voting, and to promote less well-known candidates, parties often go in for a form of vote management, in which, if they have 2 candidates A and B, they ask voters in one half of the ward to vote 'AB', and in the other half to vote 'BA'.

It would avoid or much reduce these latter two problems if voters were allowed to express equal preference between candidates. STV allowing equal preferences is perfectly possible, and has been in use for elections of trustees in some member organisations in the UK for 20 years.

4. Elected though not reaching the quota

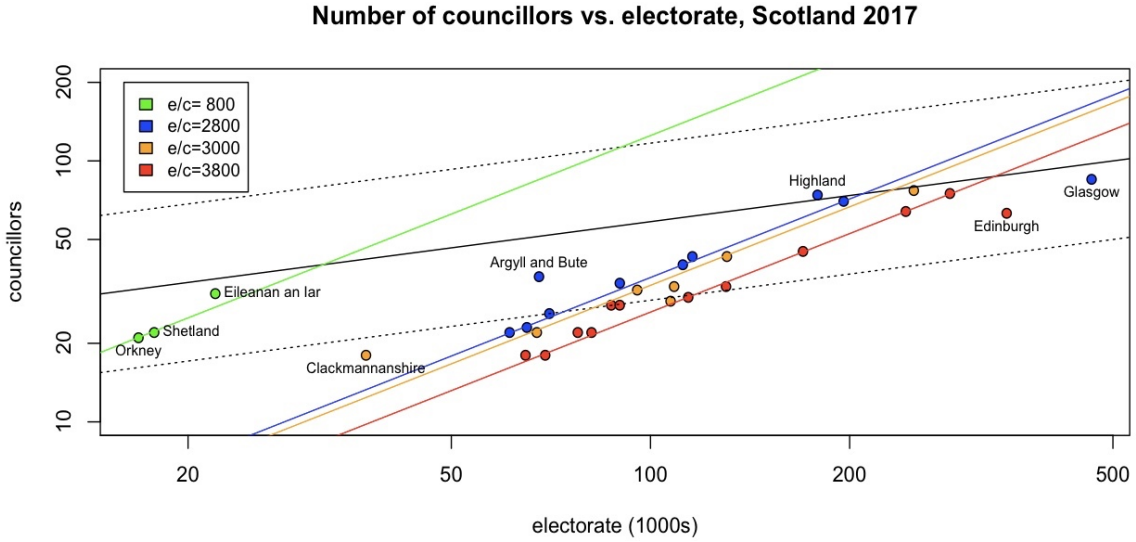
The specific kind of STV used (WiG) has some drawbacks. Because many votes or parts of votes end up as non-transferable, a candidate can be elected without reaching the proper quota. WiG also has a discontinuity problem, in that one extra vote can make a difference to the transfer of hundreds. It is thus difficult to explain to a voter exactly how and why parts of their vote have been distributed. Using the conceptually simpler Meek STV would remove all these

problems, in particular allowing the quota to be adjusted so that all elected candidates achieve the same number of votes. Meek STV's one drawback is that it cannot be hand-counted, but now that we have the track record of three successful elections using e-counting this should not be a problem.

5. How size of council depends on population

Finally, a suggestion that has nothing to do with the STV system. It is perhaps time for a fresh look at how councillor numbers should depend on population numbers and density, which both vary very widely across Scotland: electorates vary nearly 30-fold[4], population densities 350-fold[5].

Current Boundary Commission rules aim for fixed elector/councillor ratios (subject to minimum and maximum caps and a restriction on the size of changes (constraints which particularly affect the two largest councils, Edinburgh and Glasgow)), as illustrated in the figure. To use fixed ratios is to treat councillors as staff providing a service, like say GPs. For representative bodies it makes more sense to have a slower increase in the number of representatives: the ACE Electoral Knowledge Network[6] suggests that a cube-root law is appropriate: the black and dotted lines in the figure show the slower increase in councillor numbers that this would imply.



Secondly, while the island councils very reasonably get special treatment, that of similar island and sparse areas in predominantly mainland councils is less favourable. For example, Mull with its neighbouring islands, which in any of the island councils would justify a 3 or 4 member ward of its own, forms a minority in a primarily urban ward (Oban South and the Isles). This issue can hopefully be addressed in the current Islands Bill.

[4]from Orkney 16830 to Glasgow 464193
[5]from 6.8 per sq km Highland to 2400 Glasgow
[6]http://aceproject.org/main/english/es/esc03.htm

Appendix A: procedure for determining wards within a council

1. Set the desired target N for the number of electors per seat.
2. Calculate the minimum numbers $N3$, $N4$ and $N5$ for 3, 4 and 5 member wards respectively, and the maximum $N6$ for a 5-member ward, all as specified multiples of N (see below).
3. Divide the council area into wards with electorates of any size within the range $(N3, N6)$. As the maximum electorate allowed is greater than twice the minimum, it should be possible to achieve a good fit to natural communities, such as community council and school catchment areas.
4. Allocate 3, 4 or 5 seats to each ward as appropriate.

How should we choose the break-points $N3 - N6$? Clearly they should, as multiples of N be roughly halfway between the possible seat numbers, *i.e.* close to 2.5, 3.5, 4.5 and 5.5.

Arguably the fairest dividing line between allocating n and $n+1$ councillors is not exactly halfway, but so as to minimise the proportional variation in parity, which implies a breakpoint of $\sqrt{n(n+1)}$; this is the formula used in the USA when allocating members of congress to states. This would give break-points at 2.45, 3.46, 4.47, 5.48. In cases where the Boundary Commission might otherwise have to cut strong local ties some flexibility might be allowed at either end of the range.

Appendix B: determining wards for sparse and island areas

The methodology of Appendix A can be extended to situations where a potential ward has less than the minimal electorate there defined for a 3-member ward. But inevitably this requires greater flexibility in parity. If it is to be done, there are good reasons to err on the generous side in determining break-points. One of the strongest reasons is the analysis of Penrose[7] showing that the voting power of small units is less than proportional; this is the justification behind, for example, the disproportionate number of MEPs allocated to the smaller countries in the EU.

With this in mind, I tentatively suggest that where island or geographically sparse areas form clearly defined communities, they should be allowed to be 2-member wards if their electorate lies between 1 and 2.3 times the target figure N, and 3-member wards if it is between 2.3 and 3.46 times N. This gives ranges

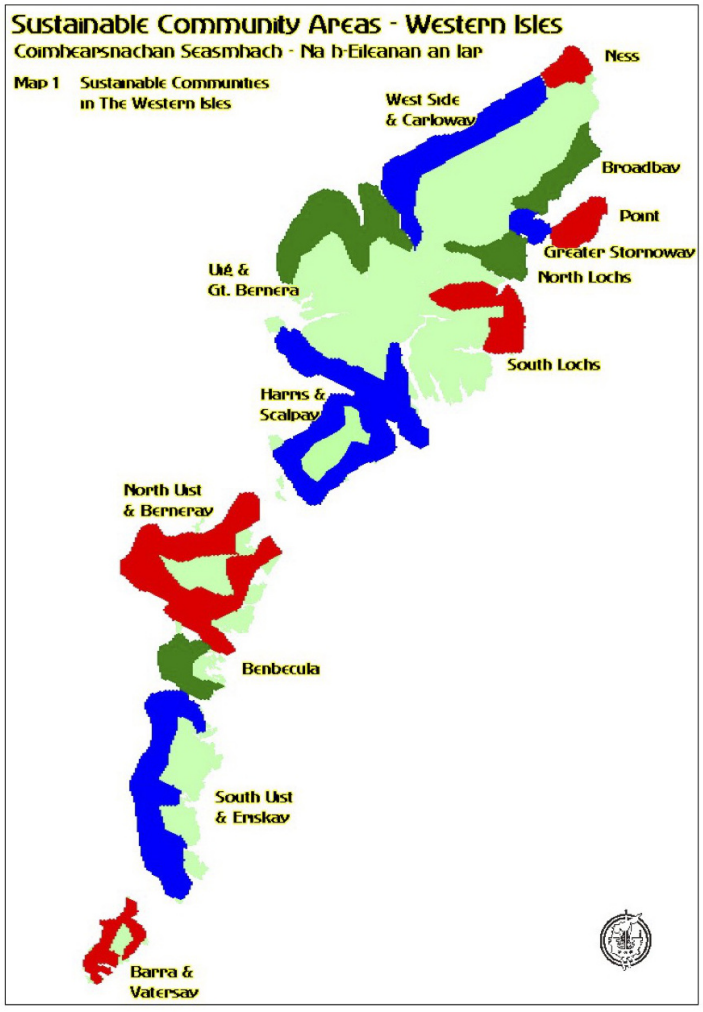
[7] L.S. Penrose (1946). 'The elementary statistics of majority voting'. Journal of the Royal Statistical Society. 109: 5357.

of variation from parity of -50 to 15 and -23 to 15 % respectively. The generous lower limit here is motivated by wishing to avoid having 1-member seats if at all possible.

There is a clear choice here. Do island and sparse communities prefer to have wards close to parity (say within the current ±10%) that cut across their natural boundaries, or would they rather put up with potentially large variations in parity so as to be represented as a community?

Turning to examples, in Argyll and Bute the island groups associated with Mull and Islay would each have an entitlement of around 1.5 seats, and thus reasonably justify a 2-member ward each. In North Ayrshire, Arran is more marginal numerically, with entitlement only just over 1, but the Penrose argument justifying above pro-rata representation applies strongly here as it is so different from the rest of North Ayrshire.

Na h'Eileanan an Iar provides a very interesting case, with its communities separated by two ferries and some extensive areas with almost no population. The map here shows the 'Sustainable Community Areas' identified through that Council's Structure Plan of 2003[8]. Three of the existing wards combine geographically well separated community areas: Barra with South Uist, Harris with South Lochs, Uig with North Lochs: and the most recent review proposed a 4-member ward combining Harris, Uig and South Lochs.



Sustainable Community Areas - Western Isles

With the flexibility proposed here, none of these combinations would be necessary. Barra could be a 2-member ward, Harris and Scalpay a 2 or 3-member ward, while there are various ways of combining the other non-urban communities into 2 or 3 member wards that make good geographical sense.

[8]http://www.cne-siar.gov.uk/eds/documents/SCA%20Geography%20Technical%20Paper.pdf