1. This note has been prepared to provide information on some of the issues that have been raised by MSPs during consideration of the Gould Report by the Local Government and Communities Committee or in the Parliament debate. This note is focussed on effects related to, or attributed to, the voting systems and, intentionally, does not address the many other important issues raised in the Gould Report.

Holding two different elections on the same day
2. There is no doubt that holding the Scottish Parliament elections and the Local Government elections at different times would overcome many of the problems encountered at the elections in May 2007. The elector education campaigns could be much more clearly focused and the voters would less likely be confused because they would be using only one voting system at any one time. The evidence from Northern Ireland in the chart in Fig 1 clearly shows that when STV elections are held on the same day as X-vote elections (as in Scotland in May 2007, first column), the proportion of rejected ballot papers is higher than when STV elections are held on their own. The NI Local Government STV elections in 2001 and 2005 were held on the same days as X-vote elections for the UK Parliament. The NI Assembly elections (STV) and the European Parliament election (STV) were held on their own. It should also be noted that the proportion of rejected ballot papers in the Scottish Local Government elections (1.83%) was well within expectation based on NI experience.

### Fig 1

**Percentage Rejected STV Ballot Papers**

Scotland and Northern Ireland
Local Government Elections - rejected ballot papers

3. As the chart in Fig 2 shows, there was considerable variation among the 32 councils in the proportions of STV ballot papers rejected, with the lowest rejection rate recorded in East Dunbartonshire (1.11%) and the highest in West Dunbartonshire (2.77%). Although geographically adjacent, these two local government areas are at the opposite ends of many scales for factors such as education, health, employment and standard of living. It is thus tempting to associate the patterns of rejection with these educational and sociological factors. Such a simplistic approach would, however, be to ignore the considerable ward to ward variation within many Local Government Areas and the variation in local initiatives to inform electors about the voting systems.

![Percentage Rejected STV Ballot Papers](image)

4. The data in Appendix D of the Gould Report (Table 3.3) show that 79% of the rejected STV ballot papers were rejected because they were marked with several “X”s or with an “X” in a confusing combination with numbered preferences. It would be reasonable to expect the numbers of such mistakes to be very much smaller in future if the STV elections were not held on the same day as an X-vote election.

5. The data in Appendix D of the Gould Report (Table 3.2) also show that 13% of the rejected STV ballot papers were rejected because they were unmarked. It must not be assumed that those blank ballot papers represented mistakes made by voters because some voters deliberately withhold their votes in some elections. This may particularly be the case when two different elections are held on the same day.

Local Government Elections - voters’ understanding of STV

6. Some MSPs have questioned the voters’ understanding of how to vote in the STV elections where the voters were free to mark as many or as few preferences as they wished. The numbers of voters who marked only one preference have been cited in...
support of this, but such voters were in the minority. For example, in the 21 wards of Glasgow City Council, only 24% of voters marked only one preference (ward range 18% to 31%), i.e. 76% (ward range 81% to 69%) marked two or more preferences. In interpreting the data on the numbers of preferences marked by voters, it must be borne in mind that the four largest parties nominated only one candidate in 70% of the wards they contested across Scotland. Coupled with that is the fact that parties that nominated only one candidate in a ward did not generally encourage their supporters to mark further preferences, i.e. for candidates of other parties. In the light of this, it is very encouraging to see how many voters made use of their preferences at what was, for the overwhelming majority, their first use of STV for public elections in Scotland.

7. Another insight to voters’ ability to use the STV voting system may be obtained from a direct comparison of the proportions of rejected ballot papers in the AMS elections and the STV elections for electoral areas covering the same electorate. The nine “Glasgow” Scottish Parliamentary constituencies within the Glasgow Electoral Region and the 21 wards of the Glasgow City Council area cover almost identical electorates. To make direct comparisons between the percentages of rejected ballot papers in the local government elections and the Scottish Parliament elections, the rejection data for the local government ballot papers were re-allocated to Scottish Parliament constituencies in proportion to the geographical area of each ward lying within each constituency, as shown in the following chart (Fig 3).

![Percentage Rejected Ballot Papers](chart.png)

8. The average percentage rejected STV ballot papers for the whole City Council area was 2.3% compared with 4.3% and 8.1% for the regional and constituency ballot papers for the nine Glasgow constituencies. The Shettleston constituency had the highest percentages of rejected regional ballot papers (5.9%) and rejected constituency ballot papers (12.1%) in the whole of Scotland, but the percentage of
rejected local government ballot papers for the corresponding area was only 2.9%, which was not the highest among the nine Glasgow constituency areas. In the Maryhill constituency the percentage of rejected constituency ballot papers was the second highest at 10.2%, but the corresponding percentage of rejected local government ballot papers was only 2.2%, below the average for the whole City Council area. The lowest percentages of rejection for all three ballot papers occurred in the Kelvin constituency: regional ballot papers, 2.4%; constituency ballot papers 4.8%; local government ballot papers, 1.7% (below the all-Scotland average).

**Local Government Elections - ‘alphabetical voting’ - ‘list-order voting’**

9. ‘Alphabetical voting’ is a well-established occurrence in all multi-member voting systems, although its effects appear to be particularly pronounced in preferential voting systems like STV. Ward vote data for the 2007 STV elections kindly supplied by Professor Hugh Bochel and Dr David Denver show that there were 327 cases where parties had nominated two candidates in a ward. In 274 of the 327 cases the higher-placed candidate of each pair received the greater number of first preference votes, compared to only 53 cases where the lower-placed candidate received the greater number of first preferences. The probability of such an unequal distribution occurring purely by chance is less than one in one million billion billion billion.

10. In his report (page 61), Ron Gould suggested that the alphabetical effect could be overcome by listing the candidates in an order determined by a public lottery, i.e. in a random order. This would remove the alphabetical effect, but it would not remove the underlying effect of listing the candidates in a fixed order because it is the relative position in the list that is the critical factor. Ron Gould also suggested that where a party nominated more than one candidate, the candidates might be grouped by party. (This option was preferred by 71% of the 100 test electors who took part in the Cragg Ross Dawson qualitative research on the design of the STV ballot paper.) However, there would then be two positional effects that would likely influence the voting patterns: the position of each party within the overall list and the position of each candidate within the relevant party group.

11. The only effective solution to ‘list-order voting’ is well known and has been in use in STV elections since 1980 in Tasmania and since 1995 in the Australian Capital Territory. This involves re-ordering by ‘Robson rotation’ the list of candidates on successive ballot papers in a way that ensures no candidate will obtain a positional advantage. Such ‘rotation’ could easily be implemented because bar-coded ballot papers are printed digitally. There would thus be no additional work involved in printing pads of ballot papers in which successive ballot papers had the candidates’ names in different orders, mixed in accordance with the rotation rules applied uniquely to each ward. Because each ballot paper is uniquely identified by its barcode there would be no problems in recording the votes in an electronic count. A manual count of such ballot papers would probably be slower than if the candidates’ names were listed in some fixed order on all the ballot papers in a ward, but electronic counting (scanning) is likely to be the norm except in by-elections.

12. Johann Lamont has, however, pointed out that electors with certain literacy difficulties are likely to rely on alphabetical ordering to guide them through lists of alphabetical information. Such electors would probably be disadvantaged by the adoption of ‘Robson rotation’ or simple randomisation. The needs of such electors

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would clearly have to be assessed against the wider requirement to remove the very large effects of ‘list-order voting’ that occurred in the 2007 STV elections. The problems that may be involved in striking such a balance are well illustrated by the decision to remove the “New Zealand-style” instructions from the AMS ballot papers on the combined ballot sheet used for the Scottish Parliament elections in 2007. Those instructions were considered “too detailed” and “a little difficult to follow” by a number of test voters, described as “less well informed and perhaps less literate”, who took part in the Cragg Ross Dawson qualitative research on the design of the AMS ballot papers. There is little doubt, however, that the removal of all such instructions from the AMS ballot papers contributed to the voters’ confusion and the high proportions of rejected ballot papers in the 2007 Scottish Parliament elections.

Electronic Counting of STV Ballot Papers
13. In reply to a question about electronic counting, Ron Gould said that under STV, applying the formulas for allotting seats is a very complex business. In fact, the formulae in the Weighted Inclusive Gregory Method (WIGM) counting rules used for the STV elections in 2007 are quite simple and none of the arithmetic is beyond Primary 7 level. The complexity in a WIGM count arises from the need to sort and count large numbers of ballot papers repeatedly at successive stages of the count and to keep separate and track correctly the parcels and sub-parcels of ballot papers of differing values at each stage of the count. It is the logistics of these operations that gives rise to the complexity, not the formulae used in the allocation of seats. It would be possible to apply the WIGM STV rules in a manual count, but there is no question that electronic counting is the more logical choice.

Future Scottish Parliament Elections - two separate ballot papers
14. It is no surprise that one of the main recommendations in the Gould Report should be to revert to the use of two separate ballot papers for the Scottish Parliament elections, to record the two votes required for the AMS voting system (page 116). However, there is a gaping hole in section 6.1 of the Gould Report that deals with ballot paper design as it contains no analysis at all of the issues that led the Arbuthnott Commission to recommend the adoption of the combined ballot sheet.

15. The Arbuthnott Commission was concerned that voters did not understand how the AMS voting system really worked and in particular, did not appreciate the importance of the regional vote in determining the shares of the seats that would be won by each party. The Commission recommended putting the two ballot papers on one ballot sheet, with the regional ballot paper placed first (on the left side), “to reflect more accurately the way mixed member [voting] systems work and to counter perceptions that the regional vote is less important” (report paragraph 4.52). The Commission commended the layout of the combined ballot sheets used in the AMS elections for the New Zealand Parliament, which give primacy to the list vote.

16. Given the widespread support that has been expressed for the recommendation to revert to two separate ballot papers, it is almost certain that two separate ballot papers will be used in any future AMS elections for the Scottish Parliament. The issues addressed by the Arbuthnott Commission will not, however, go away. It will
thus be essential for any voter education campaign for future AMS elections to take these issues on board and, in particular, focus clearly on overcoming any perceptions that the regional vote is less important than the constituency vote. The challenge this will pose should not be underestimated because the AMS voting system presents particular difficulties for voters in the Scottish political context.

17. It is very difficult for many voters in Scotland to decide how to use their two AMS votes most effectively to achieve the result they want. This is most obviously a problem for those voters whose favoured party wins as constituency seats, its fair share (or more than it fair share) of the seats in an electoral region. If such voters cast their regional votes for the same party, all of those regional votes will be wasted as they will have no effect at all on the outcome of the election. At the 2007 elections, 472,688 regional votes cast for parties that won constituency seats were wasted in this way (23% of all regional votes). It is very difficult for individual voters to avoid wasting their votes in this way because to do so, they would need detailed advance information about the likely voting patterns and outcomes in every constituency within the electoral region in which they would be voting.

18. In this connection, it must also be remembered that the AMS voting system is open to strategic manipulation by two registered political parties forming an electoral alliance in which one contests only the constituencies within an electoral region and the other contests only the regional seats in that electoral region. If their common supporters voted for the one party in the constituencies and the other in the region, those parties could win a majority of the seats in that electoral region even though they had only minority support among the voters. If this were done in several electoral regions, the two parties could win an overall majority of the seats in the Parliament for only a minority of the votes. This has not yet been attempted for elections to the Scottish Parliament, but it has been advocated by some party politicians in Scotland.

James Gilmour
18 January 2008

Disclaimer
Dr James Gilmour is a member of the Electoral Reform Society and of the Fairshare Voting Reform Campaign Committee, but he has prepared and submitted this Information Note in a personal capacity.