

# Fair votes in practice

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**Summary.** 2019 sees the 200th anniversary of the first election of a set of representatives under a proportional system, and the 50th anniversary of the refinement of that system for the computer age. The recent public availability of large preferential voting data sets for single transferable vote (STV) elections makes possible analyses of how STV functions in practice, and of voter behaviour, particularly examining how voters' second preferences relate to their first preferences. Wider experience of STV also raises some very practical questions that have not been sufficiently addressed, especially the design of multi-member constituencies and the ordering of names on ballot papers.

Intelligent approaches to the related but distinct problem of making a single electoral choice, whether in a multi-option referendum or in the election of a president, go back even further, to Condorcet (1785). Condorcet's admirable proposal has been bedevilled by the possibility of a cyclic paradox. The same methodology of relating first and second preferences can be used to estimate the size of the cyclic effect. Analysis of both Brexit polls and election data suggests that the cyclic effect is remarkably small, so that for large-scale elections it will usually be negligible compared with the distortions introduced by using rival single-choice methods such as the Alternative Vote or Borda.

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## *1. Choosing a set of representatives*

- 1.1 STV: the idea
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- 1.4 Proportionality and patterns of preference
- 1.5 Some problems and possible solutions
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## *2. Making a single choice*

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- 2.4 Estimating cyclicity for referendums
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