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Symmetry groups to connect/extend voting theory results.

To avoid voting results with undesired properties, seemingly disjoint conditions have been imposed: This includes the Nakamura number (a restriction on the number of alternatives), single-peaked and Sen's condition (a restriction on admissible rankings), and Greenberg's theorem (a restriction on the geometric number of issues). It is shown how to use symmetry groups to obtain a single theorem that explains, connects and significantly extends these results. (Received September 12, 2012)