

1056-91-1202

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Different reasonable power indices provide different orderings of importance for voters, so that the evaluation of (a priori) power in (binary) voting systems is quite arbitrary since the rankings depend on the particular power index chosen. One is left with the hope that such discrepancies occur because the voting system at hand is rare enough. To better understand what happens, we analyze the ordinal equivalence of families of power indices.

Power indices based on symmetric probabilistic values (or semivalues) with positive coefficients (regular semivalues), as the Banzhaf index or the Shapley-Shubik index, share the same rankings of voters within the class of weakly complete games. Weakly complete games contain weighted and complete games and, therefore, the most common real voting systems. This partially solves the problem because power indices are mostly applied to non-complicated voting systems derived from real problems which always are weakly complete.

The Johnston index also shows a good behavior since it is ordinally equivalent to Banzhaf and Shapley-Shubik indices in a sufficiently large class of games containing complete games. Necessary and sufficient conditions are given to determine such a class. (Received September 21, 2009)