Preference expression and misrepresentation in points voting schemes*

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1. Introduction

The selection of a method for making social choices and the actual decision making utilizing that method are the two essential stages of the political process. In this paper only the former step is examined, where only variations of the points voting system are discussed. Under the well-known points voting scheme (see for example Black [1], Intriligator [6], Riker and Ordeshook [7]), each voter is given an equal number of points to allocate over a finite set of alternatives, i.e., policies, parties or candidates. This allocation presumably reflects the relative intensities of the individual’s preferences over the set of alternatives. The points for each alternative are summed on all voters and the alternative which obtains most points wins, i.e., it represents the social choice.

The points voting scheme has been considered as an appealing means of arriving at social choice for three major reasons. First, this scheme guarantees the existence of a social preference ordering of the alternatives. Actual choice is naturally made out of the set of maximal elements (Sen [9]). Second, the points voting scheme satisfies several conditions which are highly valued in democratic systems. Under this system, voters are equally treated since individuals' vote potentials are equal, and at the same time anonymity is satisfied. The scheme also satisfies neutrality (alternatives are not discriminated), citizens sovereignty, positive responsiveness, the non-dictatorial condition and the Pareto condition (for detailed definitions of these properties see Sen [9]). Third, this voting method, unlike other methods, e.g., pairwise majority rule, not only takes into account voters' preferences over all the alternatives but it does reflect the individual relative intensities over them (Goodman and Markowitz [5], Riker and Ordeshook [7]).

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An important disadvantage of the points voting schemes has to do with the summation process which implicitly assumes interpersonal comparisons of utilities. In addition, the points voting method secures some cardinal measurement of individuals' intensities of preferences but violates the independence of irrelevant alternatives condition (Sen [9]). A related difficulty, which will be extensively dealt with, is the possibility of strategic misrepresentation of preferences under this method.

In this paper variations of the points voting scheme \( (V_1) \) are obtained by restricting the points allocation of each voter to well-defined patterns. The restrictions on preference expression are considered as part of the definition of the social decision rule. Four illustrative variations of the points voting scheme will be discussed in the sequel. In the first case \( (V_2) \), each voter is required to report only a ranking of the alternatives. Here the ranking is achieved by requiring each voter to allocate his points according to the classical Borda rule. Using this rule, when \( m \) alternatives are considered, the voter assigns \( m \) points to his most preferred alternative, \( (m - 1) \) points to his next choice and so on, ending in allocating one point to his least preferred alternative. This procedure takes into account preferences over all the alternatives, however, preference expression is indeed restricted since a unique set of weights is imposed upon all voters.

The second variation \( (V_3) \) introduces a more severe restriction, yielding a procedure which is equivalent to the commonly used plurality rule. Under this procedure each voter must allocate all his points to a single alternative.

In the third case, \( (V_4) \), the degree of freedom of the voter's preference expression is further reduced, where the resultant voting scheme might be interpreted as a federative plurality rule. This version of the points voting scheme possesses the following three constraints: (1) The set of voters is partitioned into several subsets, where each subset might be interpreted as a coalition, voting area or a component of a federation; (2) Each voter must allocate all his points to one of the alternatives; (3) Within each subset all voters must express identical preferences. Assuming that all voters are endowed with an equal number of points, then the first constraint implies a well-defined federative system with a 'fair' allocation of power among the different subsets of voters. Namely, the power of each subset is proportional to its share in the total population. The second constraint implies that the plurality rule is the means of arriving at the collective choice of the federation. The third constraint implies that unanimity must be obtained in each of the units comprising the federation. Alternatively, each subset of voters agrees upon its preferred alternative and that alternative is then reported by all members of the subset.

The fourth, and the most restrictive voting scheme \( (V_5) \), is a system under which all voters must support the same alternative.

The major concern of this paper is two-fold. First, to examine how well the various variations of the points voting scheme may reflect the prefer-