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Hyper-stable social welfare functions. (English) Zbl 1341.91070
Soc. Choice Welfare 46, No. 1, 157-182 (2016).

Summary: We define a new consistency condition for neutral social welfare functions, called hyper-stability. A social welfare function (SWF) selects a weak order from a profile of linear orders over any finite set of alternatives. Each profile induces a profile of hyper-preferences, defined as linear orders over linear orders, in accordance with the betweenness criterion: the hyper-preference of some order P ranks order Q above order Q' if the set of alternative pairs P and Q agree on contains the one P and Q' agree on. A special sub-class of hyper-preferences satisfying betweenness is defined by using the Kemeny distance criterion. A neutral SWF is hyper-stable (resp. Kemeny-stable) if given any profile leading to the weak order R , at least one linear extension of R is ranked first when the SWF is applied to any hyper-preference profile induced by means of the betweenness (resp. Kemeny) criterion. We show that no scoring rule is hyper-stable, unless we restrict attention to the case of three alternatives. Moreover, no unanimous scoring rule is Kemeny-stable, while the transitive closure of the majority relation is hyper-stable.

MSC:

[91B14](#) Social choice
[91B12](#) Voting theory

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