Individual and Group Strategy Proofness of Voting Rules: The Case for Restricted Domains

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All nontrivial voting rules are manipulable at some preference profiles when defined on a universal domain. This manipulation is possible even by single individuals, and "a fortiori", by coalitions of voters. This negative result may be reversed if the functions are defined in appropriately restricted domains of preferences, and only preferences in that same domain can be used to manipulate.

In the first part of the talk I will exemplify the type of results regarding non-manipulability by individuals (or strategy-proofness) that one can obtain under domain restrictions. I will pay special attention to the domain of separable preferences on grids. I will present a characterization of all strategy-proof rules in that context, consider the complications that arise in the presence of feasibility constraints and discuss the relevance of that paradigmatic case. I will also briefly touch upon the case of voting rules whose outcomes are lotteries.

In the second part of the talk I will consider the added difficulties that arise if one wants to guarantee that a rule is non-manipulable by coalitions of voters, in addition to being individually strategy-proof. I will also consider intermediate cases, where only "large enough" groups may manipulate. I will also show that, in spite of these difficulties, some domains of preferences have the nice property that all strategy-proof rules that one can define on them are also necessarily group strategy-proof (or at least strategy-proof in front of coalitions that are not "too large"). I will provide a characterization of those nice domains of preferences for which both types of requirements become equivalent.

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