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Strategy-proofness in experimental matching markets

Abstract:

We introduce two novel matching mechanisms, Reverse Top Trading Cycles (RTTC) and Reverse Deferred Acceptance (RDA), with the purpose of challenging the idea that the theoretical property of strategy-proofness induces high rates of truth-telling in economic experiments. RTTC and RDA are identical to the celebrated Top Trading Cycles (TTC) and Deferred Acceptance (DA) mechanisms, respectively, in all their theoretical properties except that their dominant-strategy equilibrium is to report one's preferences in the order opposite to the way they were induced. With the focal truthtelling strategy being out of equilibrium, we are able to perform a clear measurement of how much of the truth-telling reported for strategy-proof mechanisms is compatible with rational behavior and how much of it is caused by confused decision-makers following a default (very focal) strategy without understanding the structure of the game. In a school-allocation setting, we find that roughly half of the observed truth-telling under TTC and DA is the result of naïve (non-strategic) behavior. Only 13-29% of participants' actions in RTTC and RDA are compatible with rational behavior. Further than that, by looking at the responses of those seemingly rational participants in control tasks, it becomes clear that even them lack a basic understanding of the game incentives. We argue that the use of a default option, confusion and other behavioral biases account for the vast majority of truthful play in both TTC and DA in laboratory experiments.