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EDITORIAL

Editorial

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Part of this issue is devoted to selected papers of the SING 8 conference that took place in Budapest from 16th and 18th of July, 2012 at Corvinus University, Budapest. SING stands for the series of Spain–Italy–Netherlands Game Theory Meetings held annually since 2005. These events were initiated by Italian and Spanish game theorists in 2001, Netherlands joined in 2005. Its mission is to provide a forum for the advancement of game theory, to share new ideas and research findings in all aspects of game theory and its applications. Since its inception, these conferences have been open for game theorists from other countries and have grown more and more popular drawing participants from all over the world. Part of this process is that countries other than the founders were granted the privilege of hosting the conference as guest organizers. In 2012, after France and Poland, Hungary was the host country and Corvinus University, Budapest provided the venue.

The conference attracted around 200 participants with speakers from 34 countries. The 5 plenary talks and the 150 presentations given in 4 parallel sessions covered the whole spectrum of game theory, a healthy mix of non-cooperative and cooperative games, and a wide range of interesting and innovative applications.

Thanks are due to the editors of Central European Journal of Operations Research to offer its pages for publishing a selected set of papers based on the talks given at SING 8. We have received numerous high quality submissions, but the tight editing deadlines of the special issue allowed us only to accept 5 of these papers, some others may be published in regular issues of CEJOR later.

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A common feature of some higher education admission systems is that students apply for programs and are ranked according to their scores. Students who apply for a program with the same score are tied. To break ties, in Hungary, an equal treatment policy is used: students applying for a program with the same score are all accepted or rejected as a group. Then the only decision to make is, whether or not to admit the last group of applicants with the same score who are at the boundary of the quota. Both concepts can be described in terms of stable score-limits. The rejection of the last group with whom a quota would be violated corresponds to the concept of H-stable (i.e. higher-stable) score-limits currently in use in Hungary. Admission of the last group is the L-stable (i.e. lower-stable) score-limits policy. Bíró and Kiselgof (2013) show that the natural extensions of the Gale–Shapley algorithms produce stable score-limits, moreover, the applicant-oriented versions result in the lowest score-limits (optimal for students) and the college-oriented versions result in the highest score-limits (optimal for colleges). When comparing the H-stable and L-stable score-limits they prove that the former limits are always higher for every college. Furthermore, these two solutions provide upper and lower bounds for any solution arising from a tie-breaking strategy. They also show that both the H-stable and the L-stable applicant-proposing score-limit algorithms are manipulable.

Csercsik and Sziklai (2013) introduce a new family of cooperative TU games related to congested networks. The players are assumed to be traffic coordinators routing their deliveries in a network. The costs of the players are determined by the total latency of the deliveries calculated from the given edge-latency functions. Since edge-latency functions assign a latency value to the total flow on the corresponding edge, as cooperating players redesign their routing in order to minimize their overall cost, outsiders will also be affected. Due to the externalities, the resulting game is best described in partition function form. The authors show that cooperation may imply both negative and positive externalities in the defined game. They assume that coalitions may determine their routing according to different predictive strategies and show that the increasing order of predictive strategies may converge to a Nash equilibrium (NE), although convergence is not guaranteed, even if a unique NE exists. They also analyze the superadditivity and stability properties of the game.

In their paper, Csóka et al. (2013) extend the theoretical model of external corporate financing to the case when the buyers of the borrowing firm may default during the financing period. In their setup information is asymmetric and hence there is moral hazard between the lender and the borrower concerning the efforts of the borrower. They define the optimal debt contract in two cases. In the symmetric case the lender and the borrower have the same information about the buyer's probability of default. In the asymmetric case the borrower learns whether the buyer will pay or not before choosing her level of efforts. The authors prove that in the asymmetric case the borrowing capacity and the welfare of the society is weakly smaller than in the symmetric case. They also show that the nonnegative default risk of a buyer weakly decreases the borrowing capacity compared to the case when the buyer pays for sure. However, having a risky buyer might increase borrowing capacity and welfare.

Freixas and Pons (2013) study the possible rankings of success and decisiveness for individuals in symmetric voting systems, assuming anonymous and independent probability distributions. They prove that for any pair of symmetric voting systems it is always possible to rank success and decisiveness in opposite order if the common probability of voting for "acceptance" is high enough. It is also proved that for probabilities less than one-half the reversal of the ranking of these two measures is impossible.

Permutation games are totally balanced cooperative TU games arising from certain sequencing and re-assignment optimization problems. It is known that for permutation games the bargaining set and the core coincide, consequently, the kernel is a subset of the core. Solymosi (2014) proves that for permutation games the kernel is contained in the least core, even if the latter is a lower dimensional subset of the core. By means of a 5-player permutation game, he shows that, in the sense of the lexicographic center procedure leading to the nucleolus, this inclusion result can not be strengthened. This 5-player permutation game is also an example (of minimum size) for a game with a non-convex kernel.

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