The Evolution of Cooperation in Game Theory and Social Simulation

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Message from the Guest Editors

Dear Colleagues,

Although cooperation is ubiquitous in the real world, it poses conundrums to game theoretical research. Workers in a company build a project team to perform a collective activity with other members. Social media users often provide beneficial information to the unspecified majority. Clearly, cooperative behaviors are useful to make real societies effective and smooth. Besides, the simplest model of cooperation in game theory predicts that, since cooperative behaviors incur costs to cooperators and free-riding is a better option, cooperation shouldn't have emerged among rational people. Thus, there is a gap between what we observe in reality and what theory predicts. To fill this gap, theoreticians in a variety of fields such as economics, mathematics, and physics have been tackling these fundamental and practically important issues using tools developed in each discipline. In this Special Issue, we collect papers that contribute to solving the conundrums of cooperation, using a wide range of tools including game theory, evolutionary dynamics, and social simulation methodologies.

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