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Dr. Maria Kleshnina
Guest Editor
Dynamic Games and Applications

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Dear Dr. Maria Kleshnina,

Please find attached our manuscript "Introspection dynamics in asymmetric multiplayer games" by Marta C. Couto and Saptarshi Pal. We would like to submit it as a paper to the *Special Issue on Evolutionary Games and Applications* at *Dynamic Games and Applications*.

Evolutionary game theory and models of learning provide a powerful framework to describe strategic decision-making in social interactions. The simplest models involve two identical players. However, many interactions in everyday life occur among more than two individuals that differ in their available actions and in their incentives to choose each action.

Recently, introspection dynamics has proven to be a useful learning model for tackling such asymmetric games (Couto et al. 2022). In this dynamics, at each time step, players compare their current strategy to an alternative strategy. If the update results in a payoff advantage, the new strategy is more likely adopted.

In our manuscript, we formally introduce introspection dynamics for multiplayer games, extending the 2-player framework in Couto et al. (2022). We derive an explicit formula for the long run strategy abundances, equally applicable to any symmetric and asymmetric multiplayer game. We also provide analytical expressions for two special cases. We illustrate our theoretical results by studying several well-known social dilemmas and show how introspection dynamics outcomes for these games relate to replicator dynamics.

Overall, our manuscript provides an easy-to-implement framework to study multiplayer (a)symmetric games. We believe this work is of interest to a diverse scientific audience, in particular to the theoretical game theory community. Hence, we hope you will find it suitable for the *Special Issue on Evolutionary Games and Applications* at *Dynamic Games and Applications*

As potential referees, we would like to suggest the following, pointing out their relevant expertise to review this manuscript.

- **Laura Schmid** (laura.schmid@kaist.ac.kr; Korea Advanced Institute of Science and Technology) studies game theory models of reciprocity and has experience in working with introspection learning with asymmetric players.

- **Alex McAvoy** (amcavoy@sas.upenn.edu; University of Pennsylvania) has expertise in studying asymmetric multiplayer games and the evolution of strategies in them.

- **Bin Wu** (bin.wu@bupt.edu.cn; Beijing University of Posts and Telecommunications) is experienced in studying stochastic evolutionary dynamics in multiplayer games.

- **Mark Broom** (mark.broom.1@city.ac.uk; City University of London) studies game theoretical models in biology, particularly focusing on multiplayer games.

- **Jorge Peña** (jorge.pena@iast.fr; Institute for Advanced Study in Toulouse (IAST), University of Toulouse Capitole) studies theoretical models in evolutionary biology and has experience in working with multiplayer games.

With kind regards,

On behalf of the authors,

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