

Preface

The importance of strategic behavior in the human and social world is increasingly recognized in theory and practice. As a result, game theory has emerged as a fundamental instrument in pure and applied research. The discipline of game theory studies decision-making in an interactive environment. It draws on mathematics, statistics, operations research, engineering, biology, economics, political science, and other subjects. In canonical form, a game takes place when an individual pursues an objective in a situation in which other individuals concurrently pursue other (possibly overlapping, possibly conflicting) objectives, and at the same time, these objectives cannot be reached by the individual actions of one decision-maker. The problem then is to determine each object's optimal decisions, how these decisions interact to produce an equilibrium, and the properties of such outcomes. The foundation of game theory was laid more than 70 years ago by John von Neumann and Oskar Morgenstern. Theoretical research and applications are proceeding apace, in areas ranging from aircraft and missile control to inventory management, market development, natural resources extraction, competition policy, negotiation techniques, macroeconomic and environmental planning, capital accumulation, and investment. In all these areas, game theory is perhaps the most sophisticated and fertile paradigm applied mathematics can offer to study and analyze decision-making under real-world conditions.

It is necessary to mention that in 2000, Federico Valenciano organized GAMES 2000, the first meeting of the Game Theory Society in Bilbao. During this conference, Fioravante Patrone took the initiative of setting up a "joint venture" between Italy and Spain, suggesting meetings be held alternately in the said countries. The agreement on this idea led to the meetings in Ischia (2001), Seville (2002), Urbino (2003), and Elche (2004). During the meeting in Urbino, the Netherlands asked to join the Italian-Spanish alternating agreement, and so SING (Spanish-Italian-Netherlands Game Theory Meeting) was set up. The first Dutch edition was organized by Hans Peters in Maastricht from the 24th to 26th of June 2005. It was then agreed that other European countries wishing to enter the team had to participate first as guest organizers and only after a second participation in this role could they then actually join SING. As a result, the following countries acted as

guest organizers: Poland in 2008 (Wrocław, organized by Jacek Mercik), France in 2011 (Paris, Michel Grabisch), and Hungary in 2012 (Budapest, László Kóczy). Poland was the guest organizer for the second time in 2014 (Kraków, Izabella Stach) and became an actual member of SING. The 2015 edition took place in St. Petersburg.

Parallel to this activity, every year starting from 2007 at St. Petersburg State University (Russia), an international conference “Game Theory and Management (GTM)” and, at Karelian Research Centre of Russian Academy of Sciences in Petrozavodsk, a satellite international workshop “Networking Games and Management” took place. In the past years, among plenary speakers of the conference were Nobel Prize winners Robert Aumann, John Nash, Reinhard Selten, Roger Myerson, Finn Kydland, and many other world famous game theorists.

In 2014 in Krakow, the agreement was reached to organize the joint SING-GTM conference at St. Petersburg State University, and this meeting was named “European Meeting on Game Theory, SING11-GTM2015.”

Papers presented at the “European Meeting on Game Theory, SING11-GTM2015” and the satellite international workshop “Networking Games and Management” certainly reflect both the maturity and the vitality of modern-day game theory and management science in general and of dynamic games in particular. The maturity can be seen from the sophistication of the theorems, proofs, methods, and numerical algorithms contained in most of the papers in this volume. The vitality is manifested by the range of new ideas, new applications, and the growing number of young researchers and wide coverage of research centers and institutes from where this volume originated.

The presented volume demonstrates that “SING11-GTM2015” and the satellite international workshop “Networking Games and Management” offer an interactive program on a wide range of latest developments in game theory. It includes recent advances in topics with high future potential and existing developments in classical fields.

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