Final-Offer Arbitration

A look at multi-issue and multi-player extensions

Science and Mathematics Colloquium Series

Presentation by Brian Powers

Postdoctoral Research Associate
College of Integrative Sciences and Arts

Wednesday, Oct. 11, 2017
3 – 4 p.m.
Santan Hall, Room 135
ASU Polytechnic campus

When negotiations stall, the threat of a mutually expensive strike often motivates parties to make concessions. But when a strike is impossible or illegal, final-offer arbitration—where the judge must side with one party—can be an effective motivator. The tradeoff between making a more moderate offer to appeal to the judge and remaining stubborn to maximize one's potential win can be analyzed by modeling the conflict as a two-person game.

With some background in game theory (e.g. the minimax theorem, Nash equilibrium) we will look at the Brams-Merrill model of final-offer arbitration and the surprising and somewhat paradoxical result: playing optimally simultaneously prevents and promotes agreement. We will then explore more recent work extending this game to the multi-issue setting, the non-zero sum setting and the multi-player case. Throughout, we'll see how a geometric interpretation of the problem facilitates understanding of the best strategy.

Faculty and practitioners discuss their current research and field projects in the college's Science and Mathematics Colloquium Series, held throughout the academic year at the ASU Polytechnic campus. All seminars are free and open to the public.

Brian Powers' current research is focused on modeling fisheries and researching the application of game theory to problems of law and justice, examining game theoretic models of arbitration, discrimination-free jury selection mechanisms, empathy in competitive games, social network anti-coordination, and predator-prey relationships, as well as budgeted supervised learning algorithms.

His work has been published in The International Joint Conference on Artificial Intelligence and The Symposium for Algorithmic Game Theory.

Powers holds a doctorate in game theory from the University of Illinois at Chicago.

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