

Bounded Rationality and Incomplete Information in Network Games

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Abstract

Most theoretical analyses of network games have been plagued by complexity and weak predictive power. We argue that this can be attributed to two common assumptions: complete information on the network structure and perfect rationality. In this paper we relax both assumptions, that is, we assume that agents have only local information on their network and/or are boundedly rational. We show that the implications are similar, in that in both cases the agents only take their local network structure into account. We then present an experiment, in which we analyze the bounded rationality of real agents in the network game of Ballester, Calvo-Armengol & Zenou [Econometrica 74(5), 1403-1417 (2006)]. We show that participants do not choose the Bonacich-Nash strategy, but instead they take on average only into account the neighborhood up to distance 2.

Key words: Network games, Network effects, Bounded rationality, Incomplete Information, Experimental economics