Heterogeneous network games: Conflicting preferences

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Abstract:
In many economic situations, a player pursues coordination or anti-coordination with her neighbors on a network, but she also has intrinsic preferences among the available options. We here introduce a model which allows to analyze this issue by means of a simple framework in which players endowed with an idiosyncratic identity interact on a social network through strategic complements or substitutes. We classify the possible types of Nash equilibria under complete information, finding two thresholds for switching action that relate to the two-player setup of the games. This structure of equilibria is considerably reduced when turning to incomplete information, in a setup in which players only know the distribution of the number of neighbors of the network. For high degrees of heterogeneity in the population the equilibria is such that every player can choose her preferred action, whereas if one of the identities is in the minority frustration ensues.