Analyzing the Payoff of a Heterogeneous Population in the Ultimatum Game

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This paper aims at showing how analytical techniques can be employed to explain the global emerged behavior of a heterogeneous population of ultimatum game players, over different strategies, by calculating their payoff moments. The ultimatum game is a game, in which two players are offered a gift to be shared. One of the players (the proposer) suggests how to divide the offer while the other player (the responder) can either agree

or reject the deal. Computer simulations were performed considering the concept of turns (in every turn each participant plays necessarily only once, which is equivalent to performing matching a graph) in the game. We reproduce by simulations the expected analytical results at the limit of high number of turns. From these results, we are capable of establishing diagrams to say where each strategy is the best (optimal strategy).

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