Stepping Stone Equilibria

Abstract

When playing coordination games, it can be difficult for groups to select the Pareto efficient equilibria especially when another another convention has been established. To address this problem, a third strategy, a “stepping stone”, can be introduced to help the population transition to and stabilize at the desired equilibrium. This paper describes an experiment aimed to identify if and how effective these stepping stones are in group coordination games, and if temporary stepping stones produce lasting effects. In the experiment, subjects play a group coordination game resembling a stag hunt game where the “stag” equilibria is risk dominated by the “hare” equilibria, but with the inclusion of a third strategy, the stepping stone. I use three games: 1. no stepping stone, 2. “high payoff” stepping stone, and 3. “low payoff” stepping stone, with two variants each: 1. complete information and 2. incomplete information. In each game, groups start the game playing the “hare” equilibria and play for 100 rounds. Then, the game is reset at groups play again this time with no stepping stone. I find that groups transition to the Pareto efficient equilibria faster and play the “stag” strategy more frequently when there is a stepping stone in the game, and that when players have incomplete information they utilize the stepping stone strategy more than those who have complete information who are more likely to take the leap directly to the efficient equilibria when there is a stepping stone in the game.