

ABSTRACT

This dissertation contains three essays describing experiments in game theory and economics. Chapter one studies mixed strategies by asking whether game players are willing to pay for randomization. A natural intuition for mixed strategies is randomization for unpredictability, but this is theoretically fragile. A player should only randomize between strategies if indifferent, and then could choose a disequilibrium strategy. Various theories describe mixed strategies not as random play, but heterogeneous pure-strategy play. I conduct experiments in which players can choose to pay a fee to use a randomization device, applied to O'Neill's zero-sum game. If subjects did so, it would show a strict preference for randomization over any available pure strategy. In fact, very few chose to use the randomization device. Subjects' descriptions of their decision process were consistent with the notion of purification.

Chapter two also studies mixed strategies, asking whether randomization is a property of individual choice or game play. In two experiments, game players are mirrored by guessers who make predictions about game play, distinguishing best-responding from game playing. In a *Matching Pennies* game, I find that game players are they are both more interested in unpredictability and actually more random. In an *Asymmetric Matching Pennies* game, I look at whether players are willing to forgo expected payoff in order to be unpredictable, and find little difference between players and guessers, with players being somewhat better at exploiting disequilibrium play.

Chapter three experimentally implements markets for competing goods with network effects. Markets with strong network effects often have multiple equilibria, including winner-take-all equilibria in which one firm has a monopoly. Firms may compete dynamically with the aim of locking-in to a favorable equilibrium. In this paper we create an experimental market with differentiated products and network effects. When lock-in is created by simulating naïve buyers, monopoly does arise with sellers setting high prices. With human buyers, markets without switching costs are extremely competitive, with no support for stories of lock-in and monopoly. Markets with switching costs are inefficient, but this is overwhelmingly due to the individual switching costs rather than monopoly.