Adaptation Dynamics in Individual and Strategic Behavior

An Experimental Analysis

- Abstract -

Arianna Galliera

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When we look at the first rounds of an experiment, the large differences and variance among individual performances might be driven by a lack of experience and results tend to overestimate this heterogeneity. An experiment based on many rounds helps participants to adapt and improve decisions, both in strategic and non-strategic games; additionally, some individuals may be unaccustomed to a specific game and need some time to understand properly the task and their best (individual) strategy to apply.

This dissertation focuses, in four chapters, on adaptation dynamics and experience in strategic games and individual decision games. In particular, the role of experience through time that helps agents to improve their performances in accordance with their preferences.

Game repetition allows agents to fill the gap of experience in specific tasks, improving their performances and individual self-confidence. In this sense this dissertation aims to explore different experimental settings in which individuals, playing repeatedly the same task through the whole experiment, are able to become more sophisticated compared to early performances.

Two chapters focus on strategic behavior in a bargaining problem, in particular we compare how participants change their behavior through time.

A third chapter focuses on the individual adaptation dynamics in a Hybrid Public Good game, in particular the motivation of participants when contributing to a public good in the role of "leader" or "follower". In this work we distinguish between conditional cooperators and exploiters, which adapt differently to the game.

The last chapter, looks at individual decisions and experience effect in gambling games. We focus on a well-known cognitive bias, the almost-winning bias; agents misrepresenting the game are unable to distinguish between situations in which near misses signal ability and those in which no ability is involved.