Social Choice Theory

Prof. Dr. Clemens Puppe

Sommersemester 2016

Karlsruher Institut for Technology

Contents

Introduction

In standard economic theory an agent is assumed to be a **homo oeconomicus**, which portrays the person as consistently rational and narrowly self-interested, usually pursuing his subjectively-defined end optimally; he therefore follows two main characteristics:

- **Rationality**
- **Utility maximisation**

However, human behaviour often stands in contrast to this theoretical concept. Behavioural economics examines actual economic behaviour, including widespread cognitive biases and other irrationalities. Such deviations from standard predictions are often elicited by various psychological, social, cognitive and emotional factors, and consequently are commonly observed in economical experiments, in which economists try to collect data to estimate effect size or test the validity of economic theories.
In the interests of validity one generally adheres to the following methodological guidelines for these experiments:

- Incentivise subjects with real monetary payoffs (trustworthiness).
- Publish full experimental instructions (transparency).
- Do not use deception (honesty).
- Avoid introducing specific, concrete context (generalisation).

On a final note, one has to keep in mind that every result throughout this notes can be interpreted in various reasonable ways as game theory as a whole can be construed as a predictive tool for the behaviour of human beings, but also as just a suggestion for how people 'ought' to behave. Therefore we subsequently will distinguish between

- **prescriptive** - means containing an indication of approval or disapproval
- **normative** - means relating to a given model

approaches.

Chapter 1

Standard theoretic basics for analysis of strategic behaviour

First, a strategic interaction occurs when the utility of agents in a situation is mutually influenced by individual behavioural changes. Any time we have a situation with two or more agents that involves known payouts or quantifiable consequences, we generally use games to help determine the most likely outcomes.
A **game** is a formal representation of a situation in which a number of individuals interact in a setting of strategic interaction.
With this in mind, it is necessary to clarify a few terms commonly used in the study of games:

- The players: A set of strategic agents making decision within the context of the game, i.e. who is interacting?
- The rules: A mode of conduct recognised as binding, e.g. when do the players move or what can they do?
- The outcomes: For each possible set of actions by the players there is a resulting state of the game.
- The payoffs: Arriving at a particular outcome a player receives a certain payout (it can be in any quantifiable form, from dollars to utility). What are the players' preferences over the possible outcomes?

Examples are Tick-Tack-Toe games, auctions or even meetings which all can be represented by games.

In the following two sections, the equilibrium is going to be one of our main focus point as it one likely outcome of a game. Such a state, where economic forces are balanced,

and, in the absence of external influences, the behaviour leading to the equilibrium will not change, can be described by three properties:

- The behaviour of agents in such a point is consistent.
- No agent has an incentive to change his behaviour.
- The equilibrium is the outcome of some dynamic process (stability).

Furthermore, we subsequently study different formal representations which we use to model the conflict situation. However, all situations we will examine will have complete information, i.e. perfect knowledge (esp. structure of the game, possible actions and payoff functions of all players) is available to all individuals.

Bibliography

- Prof. Dr. Szech's lecture about Economics and Behaviour in 2015
- Berninghaus, Ehrhart, Gueth: Strategische Spiele, 2002
- Kahnemann, Daniel: Thinking, Fast and Slow. Farrar, Straus and Giroux, 2011.
- Ariely, Dan: Predictably irrational. New York: Harper Collins, 2008.
- Ariely, Dan: The Upside of Irrationality. New York: HarperCollins, 2011.
- Güth, W.; Levati, M.V.; Nardi, C.; Soraperra, I.: An ultimatum game with multi-dimensional response strategies, 2014.

Index