Bounded Rationality: Theory and Experiments

Expectations, Social Influence and the Economy (ExSIDE) program

University Ca’ Foscari, 9 – 13 October 2017

This course focuses on selected models of bounded rationality of financial markets and their validation in experimental laboratory. We will cover such key concepts of bounded rationality as K-level of thinking theories and reinforcement individual learning theories. Paying special attention to validation of the theories using experimental data, we will review recent experimental work on trading in financial market, expectation formation, and adaptation. In analysing the models and experiments apply some tools of nonlinear dynamics theory will have to be used.

Key topics:

- Bounded rationality, expectations and learning
- K-level of thinking theory
- Economic experiments of financial markets
- Bubbles and crashes in the models and labs
- Heuristic Switching Model, its estimation and validation
- Individual Evolutionary Learning model

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Program (preliminary):


Literature:

Methodology of Experimental Economics


Day 1


Day 2


Day 3


Day 4


Day 5


Other suggested reading:

Day 1:


**Day 2:**


**Day 3:**


**Day 4:**


**Day 5:**


Bounded rationality—more than a theory—is a warning to economists and social scientists that can be summarized as the study of how people make decisions in an uncertain world. As pointed out by Greg Gigerenzer, there are at least three meanings attributed to unbounded rationality: optimization: there are constraints in the outside world that don’t allow us to get all the data available. Biases and errors: there are constraints in our memory and cognitive limitations that limit our decision-making ability. Bounded rationality: how do people make decisions when optimization is out of reach. Bounded rationality thinking is limited by the available information, the tractability of the decision problem, the cognitive limitations of our minds, and the time available to make the decision. This type of thinking is called “satisficing,” or doing the best you can with what you have. The ideas of bounded rationality and satisficing are now widely accepted, and its insights are fueling research throughout the social sciences. Understanding bounded rationality and satisficing as two principles that are at play in decision-making and judgment in the homeland security ecosystem is important because in complex, fast-moving environments, practitioners of the security arts can be bounded to decisions that use both heuristics and biases. The theory of bounded rationality sees the decision process from a very different point of view. In the decision-making process, even in relatively simple problems, a maximum cannot be obtained since it is impossible to verify all possible alternatives. People differ in both available opportunities and desires (influenced by environmental factors). Bounded rationality is a central issue in the behavioral approach to economics, which is deeply rooted in the ways in which the actual decision-making process influences the actions that are taken.