"Information transmission and incentives"
June 27th, 2023 – Brescia

Venue: Room A5, Department of Economics and Management, Contrada S. Chiara n. 50, Brescia

Overview

The production, use and manipulation of information play an ever-increasing role in our economic and non-economic lives. In this workshop, the speakers consider different types of prototypical situations, each one illustrating an interesting aspect of the role of information in social interactions:

- A non-strategic exchange of opinion between two individuals. Will they reach consensus?
- A strategic setting in which one individual knows more about the state of nature, but she is interested in the action taken by another individual who has different objectives. What is the optimal amount of information that she should communicate?
- A strategic setting in which an individual may delegate actions to another individual who has some control on the realization of uncertainty. What is the best form of delegation?
- A situation in which individuals have access to different types of experiments (prediction machines). Based on some properties of their utility functions, can we define which prediction machines are more valuable?

Program

10.30 -11.30	**Prof. Herakles Polemarchakis (*University of Warwick*)** *"Rational dialogues"*
11.30-12.30	**Prof. Françoise Forges (*Université Paris-Dauphine*)** *"Neologisms in cheap talk games"*
14.30-15.30	**Prof. Dino Gerardi (*Università di Torino, CCA*)** *"Delegation with endogenous states"*
15.30-16.30	**Prof. Marco Ottaviani (*Università Bocconi*)** *"Comparison of experiments in monotone problems"*

Abstracts

Herakles Polemarchakis (Warwick): "Rational Dialogues"
(joint work with John Geanakoplos)

Any finite conversation can be rationalised.

Françoise Forges (Paris Dauphine): "Neologisms in cheap talk games"
(joint work with Stéphan Sémirat)

We study pure perfect Bayesian equilibria (PBE) in sender-receiver games with finitely many types for the sender. Such equilibria are characterized by incentive compatible (IC) partitions of the sender's types. There is typically a plethora of pure perfect Bayesian equilibria (PBE) in cheap talk games. Many refinements of PBE are conceived for signaling games and have no selection power in this framework. By contrast, neologism-proof equilibrium is tailored to cheap talk games but is so demanding that it often does not exist, even in well-behaved games. We show that, in the case of ordered types, real-valued decisions and well-behaved utility functions (namely, strictly concave, single-peaked, single-crossing and with an upward bias for the sender), a forward-neologism-proof PBE always exists. This is a variant of neologism-proof PBE in which neologisms are required to be incentive compatible. The proof is based on a better response dynamics.

Dino Gerardi (College Carlo Alberto): "Delegation with endogenous states"
(joint with Lucas Maestri and Ignacio Monzon).

We present a model of delegation with moral hazard. A principal selects a set of possible actions that an agent can choose from. Before choosing an action, the agent can exert costly effort that affects the distribution of an uncertain state of the world. We identify the economic forces that shape delegation. Optimal delegation sets take one of three simple forms. First, they can be floors: the agent can only choose actions above a given threshold. Second, they can be gaps; the principal prohibits intermediate actions, so the agent must choose among extreme options. Third, they can feature both a floor and a ceiling; the agent can only choose intermediate actions. The key determinant of the shape of optimal delegation sets is how effort affects the distribution of the state of the world.

Marco Ottaviani (Bocconi): "Comparison of experiments in monotone problems"
(joint work with Alfredo Di Tillio e Peter Norman Sørensen)

Blackwell (1951) characterized when an experiment is more informative than another, in the sense that no rational decision maker would prefer observing the second experiment rather than the first. This paper provides a novel characterization for a binary-signal experiment A to be more informative than another arbitrary experiment B for all decision makers with preferences in Quah and Strulovici's (2009) interval dominance ordered class, encompassing monotone decision problems (Karlin and Rubin, 1956) and single-crossing preferences (Milgrom and Shannon, 1994). We show that if experiment A satisfies the monotone likelihood ratio property, then A is more informative than B if and only if all posterior beliefs induced by B are dominated by (dominate) the belief induced by the highest (lowest) signal from A in the likelihood ratio order. If instead experiment A fails to satisfy the monotone likelihood ratio property, Blackwell's (1951) characterization applies: A is more informative than B if and only if B is a garbling of A.