

Economic Theory, Decision Theory and Experimental Economics
Seminar

Foundations of non-Bayesian Social Learning

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Tuesday, 22nd November 2016

12:30pm Room 3-E4-SR03 Via Röntgen 1 Milano

Abstract

This paper studies the behavioral foundations of non-Bayesian models of learning over social networks and develops a taxonomy of conditions for information aggregation in a general framework. As our main behavioral assumption, we postulate that agents follow social learning rules that satisfy “imperfect recall”, according to which they treat the current beliefs of their neighbors as sufficient statistics for the entire history of their observations. We establish that as long as imperfect recall represents the only point of departure from Bayesian rationality, agents’ social learning rules take a log-linear form. Our result thus establishes that all other non-Bayesian models of social learning (such as the canonical model of DeGroot) deviate from Bayesian rationality in ways above and beyond the assumption of imperfect recall. We then obtain general long-run learning results that are not tied to the specific functional form of agents’ learning rules, thus identifying the fundamental forces that lead to learning, non-learning, and mislearning in social networks. Our characterization results establish that long-run beliefs are closely linked to (i) the curvature of agents’ social learning rule and (ii) whether agents’ initial tendencies are amplified or moderated as a result of their social interactions.

Keywords: social networks, non-Bayesian learning, bounded rationality.

JEL Classification: D83, D85