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Strategic Communication in Networks

Economic and social agents often have to make choices without precisely knowing the relative advantage of their different options. In arriving at a decision, of purchase for instance, they may use their past experiences as well as the experiences of others, especially those who are close to them. Departing form that observation, contexts of interest will exhibit the following feature: information about the environment that is relevant for a group of agents is dispersed among the members of that group. Besides, sharing private information constitutes the only way these agents can accurately assess the world they evolve in, and react appropriately to it.

Instead of taking place via centralized institutions, it seems now largely admitted that many of such information exchanges occur through informal networks. A communication network can be defined as a set of links through which agents' information circulates. It is a broad notion that encompasses the relationships of interacting friends, virtual ties on the Internet, as well as regular exchanges that a colleagues have at work. During the past decade, the study of networks has been a very active area of research in economics, brightly surveyed in “Social and Economic Networks” by Matthew Jackson (2008, Princeton University Press).

This presentation will focus on the link between the way *agents share private information* and *the structure of the networks they are in.* We hope to make clear that this link can go in two ways depending on whether the network architecture ``influences'' or ``is shaped'' by communication. For each of these ways, we will present the main questions that have been raised by economists with an emphasis on the speaker’s own works. Using simple examples, the main objective to show how some of these questions can be rigorously answered by applying game theory and graph theory to economics.