

Report from the 8th Coalition Theory Workshop

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The VIII Coalition Theory Workshop was held in Aix en Provence on the 24th and 25th January 2003.

The Conference was organised by GREQAM, and, in particular, by Antoine Soubeyran (scientific organisation), and Marie-Hélène Roth and Diane Djenderedjian (administrative organisation).

This years' workshop has focused on the theoretical analysis of the formation of social and economic networks, and on some applications inspired by recent case studies.

The first type of contributions attempt to build a general theory of social and economic behaviour in networks, and to describe and investigate the incentive of agents to form or destroy social and economic links. Among these, **Matthew Jackson** presented a paper aiming at reconsidering the formulation of distributive values in network games. In particular, Jackson discussed certain variations of the so called Myerson-valued, sharing the total network value across agents according to expected marginal contributions. Jackson argued that the Myerson's value fails to capture some aspects that are relevant to the design of distributive rules, and that are related to the threat of players to form alternative structures in the process of forming the observed network.

Another prominent contribution was offered by **Fernando Vega Redondo**, modelling the process through which society with dense social interactions succeed to build up a bigger stock of human capital. His model describes the dynamics of network formation as these are based on the repeated play of a prisoner's dilemma, in which the possibility of detecting and punishing defecting players depends on the density of social relation maintained by these players.

Sanjeev Goyal turned the attention to the yet little investigated problem of spill-overs across non connected players. These occur, for instance, in oligopolistic market and trade areas. Goyal shows that the equilibrium requirement he imposes restricts the architecture of networks that may arise. In particular, negative externalities from other players links favour the formation of asymmetric networks, with some players bearing the majority of links in the system. Positive externalities, in contrast, lead to a more egalitarian distribution of links, even among players with different characteristics.

Another important contribution was presented by **Murat Sertel**, and dealt with the design of social codes that allow the achievement of efficient outcomes in the presence of externalities and, therefore, of possibly conflicting interests of agents. He provided necessary and sufficient conditions on the magnitude of these externalities for such a code to exist. This paper brings attention to the distinction, rather overlooked in the literature, between the physical or "technological" feasibility of coalitional objections and the institutional feasibility of such objections, which may require the approval of members of society which are not active in the defection.

Other contributions focused on more applied studies, mainly motivated by current policy issues whose formal treatment may gain from the consideration of "network effects".

Patrick Ray has addressed the problem of backbone internet competition. In particular, Ray's paper attempts to develop a framework for modelling competition among interconnected Internet backbone

operators. The papers shows if no direct payment is possible between users and operators, then the access charge generally fails to implement the efficient allocation of Internet use among end users.

In addition, the degree of market power of providers is shown to affect their incentives in accepting an efficient regulation of access charges.

Another application of games of network formation came from **Hideo Konishi**, studying the formation of free trade agreements (FTAs). Konishi shows that countries with similar characteristics are more likely to reach an FTA. In particular, when countries are symmetric and industrial commodities are not extremely substitutable, the complete global free trade network emerges as the unique pairwise stable architecture.

Other contributions in this group include **Thierry Mayer**, proposing an explanation of the “border effect” in trade based on network communication effect among traders, and **Antoni Calvo-Armengol**, studying how the introduction of externalities in workers preferences (affected by the salaries of their neighbour) can lead to widespread skill segregation.

Finally, a series of contributions reported on the latest development of the theory of coalition formation. In particular, **Francis Bloch** presented a paper analysing the process of dynamic bargaining when players can form coalition and continue to bargain exploiting their bigger power, while **Vincent Vannetelbosch** has studied the problem of farsightedness in coalition formation.